SETTING

HOSTILE

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The HOSTILE Setting book is a gritty science-fiction roleplaying game designed to be used with its companion volume, the **HOSTILE** Rulebook**.**

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HOSTILE

A Handbook to Working Off-World For Leyland-Okuda

"Forward Thinking. Innovative, Relentless"

LEYLAND-OKUDA

MENU

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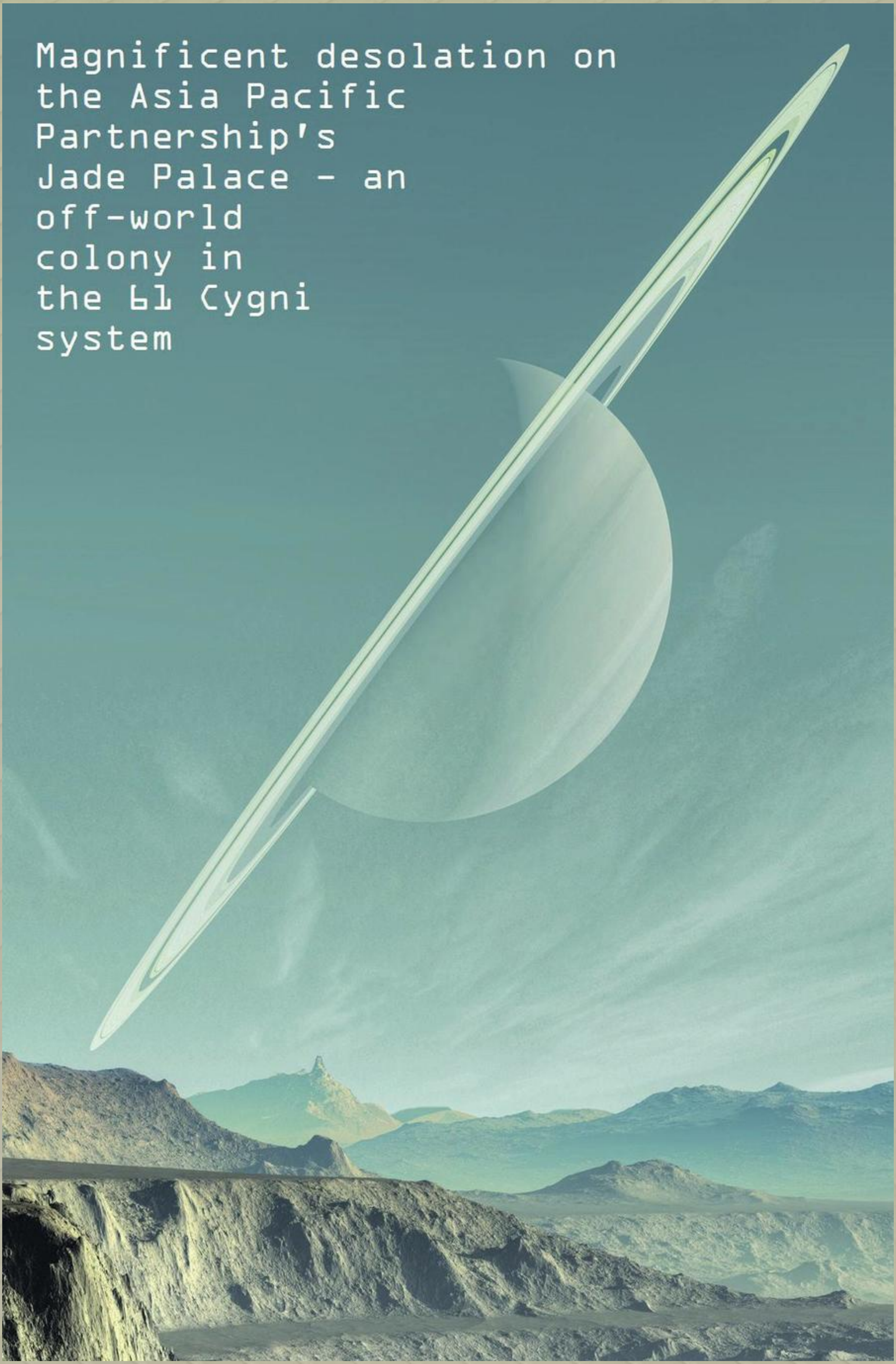


Magnificent desolation on the Asia Pacific Partnership's Jade Palace - an off-world colony in the 61 Cygni system

MISSION STATEMENT

1

We live, as we dream – alone.
Joseph Conrad

HOSTILE is a gritty, near future roleplaying setting. It is designed to be played with its own companion book called the HOSTILE Rules Handbook. Alternatively, players can use a copy of the Cepheus Engine RPG since HOSTILE is heavily based on that game. Obviously, we recommend using the companion HOSTILE Rules Handbook, but feel free to use Moon Toad's Cepheus Engine RPG or Samardan Press' free Word.docx version instead – both are available on DrivethruRPG.

This Setting book looks at the history, corporations, Off-World colonies and starships of the near future American Sector of interstellar space. It also provides some setting specific rules mechanics and a referee's guide to running science fiction horror games.

When we refer to a rule mechanic, we simply state that it is in 'the Rules' – you can find the specific ruling in whichever rulebook (either the HOSTILE Rules Handbook, or the Cepheus Engine) that you are using.

WHAT IS HOSTILE?

The future is not as optimistic and rosy as many SF writers would have us believe. Space exploration is difficult, hard and dangerous and the thriving interstellar society made up of hundreds of populated planets never materialized. Instead space is the preserve of the big corporations that focus on extracting minerals, oil and other raw materials from the extra-solar planets and moons to be shipped back to Earth in order to support the vast populations there. Space is not a place for tourists or fortune-hunters; it is a hostile and brutal frontier, where men and women work hard, rely on nobody but themselves, risk death every day and face the Unknown. And out here the Unknown is real – it is horrific: there are rumours of the disturbing side-effects of hyperspace, of ancient horrors entombed on icy moons, and of monsters – killer aliens, perfectly evolved to survive the hostile wastes of space – at any cost.

People live and work in other star systems of course, but they work hard and they work for the big corporate concerns - the settlements and colonies are there to support them. In a way, life out across the star systems of the American Sector of interstellar space resembles the northern territories of Canada on modern-day Earth. It is a wilderness that can be hard on visitors and workers, but one rich in resources. There are settlements full of miners and their families, drilling rigs, refineries, science outposts, logging camps, vast open cast mines, production and maintenance facilities. Think of it almost as Alaska-in-Space, with the crews of the star freighters playing the role of the Ice Road Truckers…

Inspired by movies like Outland and Alien, this gritty, near future setting presents a universe of mining installations, harsh moons, industrial facilities, hostile planets and brutal, utilitarian spacecraft. Games feature down-to-earth characters, such as spacers, miners, explorers and rover drivers – the folks who get things done out here in the lonely and hostile star systems of the American Sector. None of the habitable worlds are a paradise and most aren't remotely Earth-like; there is always a kink that makes life tough, whether it's the biosphere, the seasons, the radiation, the atmosphere or one of a score of other deadly effects.

Of course there are a number of conceits, but these are familiar to readers of science fiction. Why travel to the stars to dig out minerals when our own Asteroid Belt has more than enough? And why go all that way to drill for oil? Have I not heard of the modern revolution in bio-plastics? **HOSTILE** emulates the gritty, uncompromising SF of the late-Seventies and early-Eighties; movies like Alien, Outland and Bladerunner. In Alien, the heroes are the crew of a tug pulling 200 million tons of crude oil to Earth (according to the shooting script); with the Oil Crisis of the Seventies still stinging, this made a very plausible future. In our own near future the addiction to petroleum is likely to continue, we are experts at processing and utilising it, and once it has ran out here on Earth, we will be forced to look elsewhere for the 'black gold'. Bio-plastics, manufactured from vegetable crops, have a singular disadvantage: they must be grown and harvested in the place of edible food crops. With the Earth's population increasing exponentially, a bio-plastic crop may be difficult to justify.

Should there be some impediment to exploiting the mineral resources of the Asteroid Belt and the petroleum deposits on Saturn's moon Titan, then the powerful corporations are going to have to get creative and get out of the solar system to reach other stars…

WHY IS HOSTILE DIFFERENT?

Another sci-fi setting. What's the point?

You can play a bunch of marines or space traders in any setting – can't you? Well, that's quite true.

What setting gives you, however, and some settings in particularly, is flavour. The Magnificent Seven and The Seven Samurai are the same story, but the different settings create a wildly different look and feel and atmosphere. Outland is often said to be a remake of the classic western High Noon, but it could not look more different and feels claustrophobic, dangerous and inherently industrial. Even Dan O'Bannon's script for Alien was based on an earlier offering, the 1958 movie, It! The Terror From Beyond Space. In this 50s 'B-movie', just as in Alien, the creature is eventually exposed to the vacuum of space and killed. In the 1979 movie Alien, however, the gleaming rocket-ship, the heroic characters and the tone of the movie are all transformed to fit a dystopian, care-worn future, dark and grimy, inhabited by hard-working Joes operating a ship that more resembles a run-down power-station or factory than a futuristic faster-than-light starship.

The six main themes of **HOSTILE** are found in those late 1970s and early 1980s movies. They are:

1 Work

The heroes are workers. They don't just inhabit the setting, they make it work; they are the blue-collar grunts who want to make a living. The scientists, tourists, military tacticians, corporate executives and wealthy playboys can kiss their behinds. This is a setting for skilled people doing dangerous jobs. Don't get in their way, threaten to withhold their bonus pay, or swap the beer for that cheap L4 lager.

2 Industrialization

Near future technology is ubiquitous, large-scale and over-powering. There are vast cities, massive production facilities, floating refineries, orbital pipelines, drilling platforms, airlocks and colony facilities. Everything looks used, greasy, worn – just as it would in real life. There is a nod to the future, but for the most part this technology looks like it jumped right out of the late-20th century. There are warning decals plastered on the walls, there are operators' handbooks on the tables, familiar black and yellow warning stripes warn of danger areas, while yellow flashing lights and klaxons familiar to every building site in modern North America tell us we are in an active working area. This theme tries to downplay the 'futuristic' aspect of the future, and populate it, instead, with the familiar.

3 Danger

Nothing is easy. There are no pleasure planets. There are no resorts or space tourists. There are no bountiful Earth-like colonies where humans can 'begin again' in a far-away Eden. First World War soldiers sometimes described warfare as "months of boredom punctuated by moments of terror", and in a similar vein the player character inhabitants of **HOSTILE** describe their working lives as mostly "drudgery punctuated by extreme danger". You could say that these are player characters: of course their lives are dangerous! But these characters have dangerous jobs as a matter of course. Miners, spacers, marines, rover drivers, oil drillers and others all command good wages for difficult and dangerous working conditions. And this colours the personalities and characters that will crop up in this setting. Watch James Cameron's The Abyss, or watch Ice Road Truckers, Deadly Catch, Gold Divers or a dozen of other job-orientated reality shows to take a peek at some of the personalities and problems that these high threat, high pressure jobs feature.

4 Human-Centricity

No aliens. Well, no intelligent aliens at least. The focus is on the human struggle to survive in space and the expansion of human settlement in to neighbouring star systems. The political wrangling and cultural confusion coming from alien contact would detract from that main theme. It is a human universe – at least superficially. Alien animals abound, however. It is a hostile universe and so the so-called habitable planets are all teeming with exotic alien creatures that are able to successfully digest a human being. Keep advanced alien races out of the setting.

5 Retro-Futurism

This theme is a matter of taste, and could easily be left out and ignored. Retro-Futurism is the future as predicted by people in the past. It is inevitably wrong, just as our own 2021 attempts to predict what life will be like in 100 years will be way off the mark. There is another term, zeerust, coined by Douglas Adams no-less, to describe some super-cool futuristic element of an old novel or film, that now just looks amusing, quaint and dated. The giant oil refinery in the 1979 movie Alien is a good example of this. Yet movie makers and novelists aren't always interested in trying to create a realistic vision of life in the future. And neither does this role-playing game. Director Peter Hyams swapped laser guns for shotguns in his movie Outland, as a reaction against the laser-light show of Star Wars a few years earlier. Ridley Scott had seen the flat-screen technology used in 2001- A Space Odyssey, but opted to fit out the spaceship Nostromo with 'old-fashioned' cathode-ray tube TV screens to create a used, battered, work-a-day atmosphere. These were design choices.

HOSTILE makes the same choices, looking into the future, but not too far. The further you go, the less familiar the landscape. American industrialization, projected into the stars, is a setting with almost no learning curve. Players and referee alike are all on the same page: there will be dollars, fork-lifts and labor unions, there will be coffee and muesli for breakfast, there will be Reebok high-tops and air force flight suits.

6 Cynicism

The 1970s were a time of cynicism and a growth of conspiracy theories. There were lies told and cover-ups made about the war in Vietnam, there were the embarrassing revelations of Watergate and of course the House of Representatives Select Committee on Assassinations which published its findings in 1979, announcing that there had been a conspiracy to murder President John F. Kennedy back in 1963. And it was in 1976 that Bill Kaysing published accusations that NASA had faked the Apollo Moon landings, opening the flood-gates for a torrent of similar Moon-conspiracy theories.

It was this climate of conspiracy that inspired the screenwriters of Alien to ear-mark 'The Company' as an agent of subterfuge and manipulation. The employer could not be trusted. In Outland, too, the company managers are on the take – they are part of the problem. This theme is not all about conspiracy, however, but more often a cynicism about the lives of the men and women doing their jobs that are being ignored by, abused by or exploited by, those at the top-end of the company.

Heroics aren't rewarded with media attention and silver stars, heroics simply keep you alive. This is a small scale universe, with a perverse, cynical, down-trodden vibe.

"I don't trust anybody. And I don't ask questions because the answer's always: 'don't ask!'"

INSPIRATION

Alien
Aliens
Alien3
Alien: Resurrection
Prometheus
Alien: Covenant
Outland
Android
Zygote
Blade Runner
Bladerunner 2049
The Thing
Spacehunter
The Abyss
Dark Star
Red Dwarf (series I-XII)
Moon 44
MOON
Total Recall
Event Horizon
Pitch Black
Space Truckers
Screamers
The Sphere
Silent Running
Elysium
Alien Isolation (game)
Moons of Madness (game)

'We live, as we dream – alone...' – Joseph Conrad Heart of Darkness

The Future...

A place of opportunity and adventure among the stars. New worlds to explore and conquer, abundant alien life, rich resources and the freedom to wander between star systems. The Future - a bright and optimistic land.

The Future's here
It never lived up to the hype.

Interstellar space - interstellar travel itself - was harsher and more uncompromising than anyone could have imagined. Where were all the Earth-like worlds we were supposed to colonise? Where were the alien races we were supposed to meet and communicate with? Where could humans actually stand, and take a breath, without wearing a god-damn space suit? Yes, there were worlds with atmospheres, and some of them don't even kill you, but that's the real joke that the Universe has played on us. You see you can't get everything at once. Temperate climate, breathable atmosphere, a friendly biosphere: choose two.

Two hundred years ago optimistic dreamers like Gerard O'Neill imagined waves of happy Earthmen and their families rushing into space to settle there, to build immense colonies and space habitats, to grow vegetables and set up schools and businesses.

Well you never saw anyone trying to colonize Antarctica or the Gobi Desert, did you? And those harsh wildlands are hundreds of times more hospitable (and survivable) than Outer Space. So the waves of colonists stayed put.

Out here, interstellar space is a workplace. The only Earthmen you'll see on the planets and moons that orbit these distant stars are miners, loaders, freighter crews, colony technicians, drivers and executives. And they're only happy when their tour of duty ends with a few months leave and a nice bonus in their bank account.

It's a tough life. The Universe doesn't make oil and mineral extraction easy, and there are a hundred different ways to die out here - few of them leave anything to ship back to Earth. This is a life suited to the tough, to the imaginative and to the stubborn. Do you still want to sign up for a tour?

Don't say I didn't warn you

ORIENTATION 2

Mankind explored and colonized the solar system throughout the 21st century and by 2100 many planets and moons were home to outposts and mining stations. The nations of Earth had over-reached themselves, however, and much of the cost of the space effort was tendered out to Southern Cross Mining. Likewise, Luna had divested itself of the burden of maintaining mining outposts and space colonies, offering the enterprises to the Reiner-Gamma Corporation.

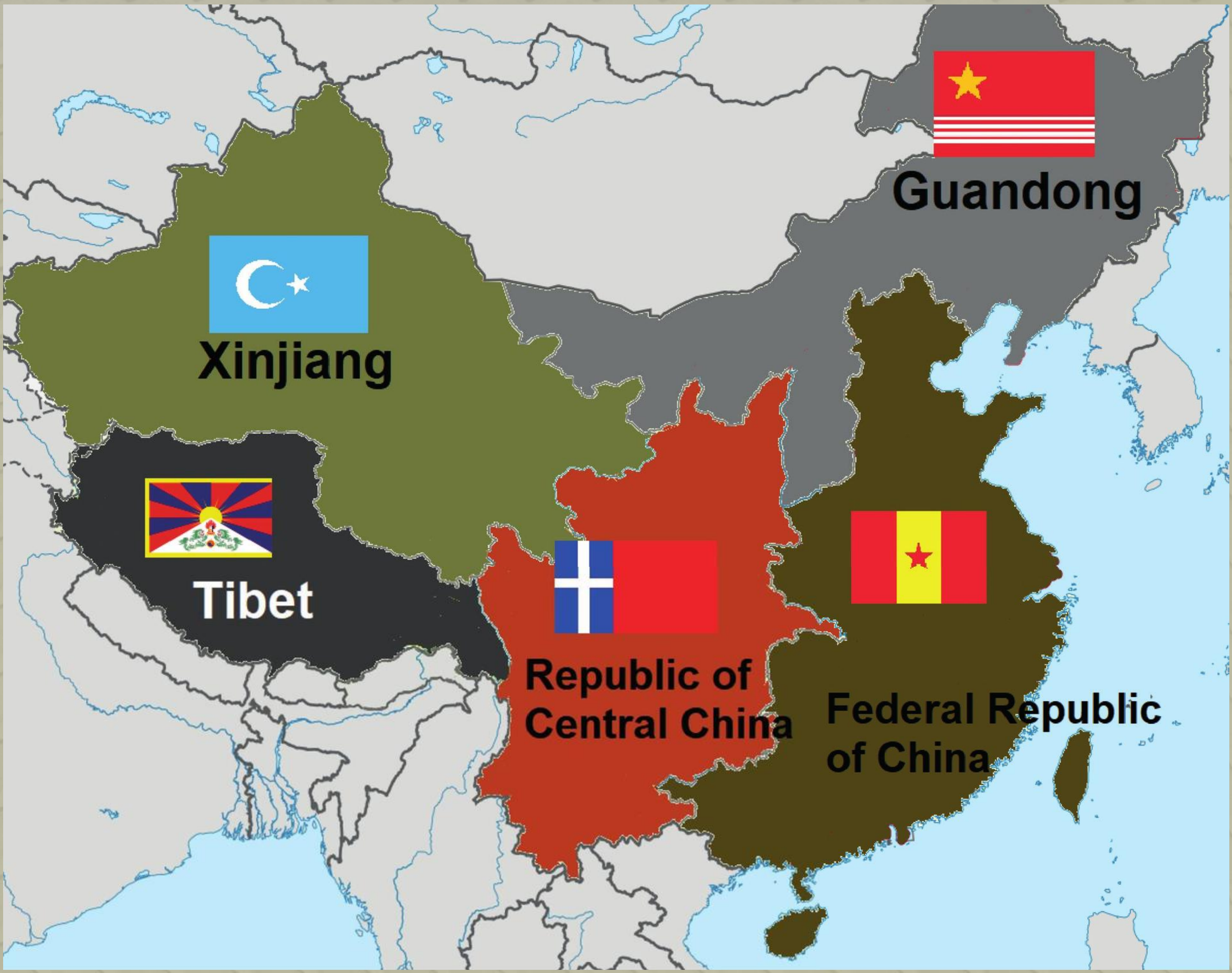
Within a decade or two Earth and Luna were politically united, but the human race was under an immense population and resource pressure. Reiner-Gama soon swallowed up Southern Cross and dominated the solar system, supplying petroleum and minerals to Earth at any price it chose. The other, major corporations of Earth put their faith in a new breakthrough, the quantum hyperspace tunnelling effect, and after the first hyperspace ship returned from Alpha Centauri in 2120, were soon building ships able to scout out resources in neighbouring star systems. We had a Faster-Than-Light drive!

ORBITAL 2100 is Zozer Games' hard SF setting that predates HOSTILE by a century. It is limited to fission plants, spin gravity technology and to the confines of the Solar System. Find it on DriveThruRPG.

THE FIRST RECESSION [2166-2170]

After the creation of an interstellar drive, a scramble for the stars ensued as mining and oil drilling companies desperately sought out resources that they could supply to Earth – thereby skirting Reiner-Gama's near monopoly within the Solar System. Within thirty years there were twenty flourishing colonies within 4 parsecs of Earth and dozens of small outposts and mining installations.

On Earth, stresses were beginning to show within the world government of the Earth Union. The Chinese Communist Party initiated greatly-needed and wide-ranging reforms but these could not stem the economic and social problems that had piled up over the past four decades. In 2166 the Communist Party was abolished and amid political turmoil a new, more democratic government, was established. Earth, tied intimately into the Chinese economy was plunged into the First Recession, the world government reacted poorly, and lost the confidence of many nations. China broke apart, just as the Earth Union itself collapsed. Manchuria successfully seceded from the 'new' China to create the People's Republic of Guandong. Various autonomous regions in the far west, including Tibet and Xinjiang, followed



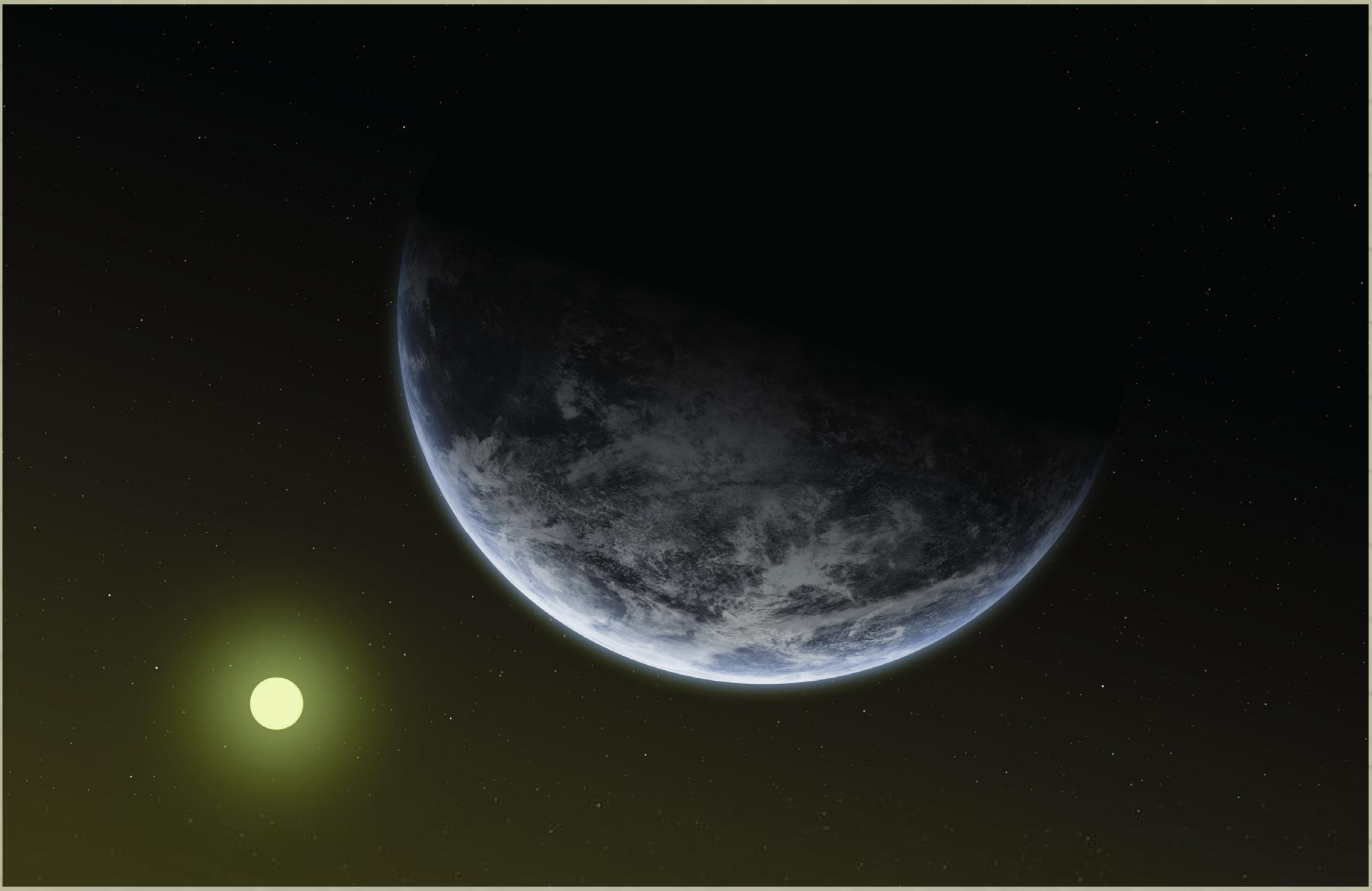
suit. The economic heartland of China, the wealthy and well populated east coast styled itself as the Federal Republic of China. The chaos lasted for a decade, and within that time of uncertainty and of a shrinking China, Japan and its powerful corporations stepped up.

Japan had itself undergone social and economic transformation starting twenty years earlier, and had tackled systemic problems of an aging population, a shrinking population and a reliance on foreign raw materials. With controlled immigration from within the Asia-Pacific region, and renewed focus on automation, robotics and artificial intelligence technologies to increase productivity, Japan was looking boldly into the future. As China entered its time of crisis and First Recession began to bite, Japan was able to show leadership in the region and formed the Asia Pacific Partnership in an attempt to weather the storm. China had lost its lead in the region – Japan once again dominated the Far Eastern area. In 2170 the major corporations of the world came together in Singapore to create the United Corporate Combine - essentially a standing inter-corporate council. The Combine's first task was to establish agencies which would regulate international business and practices, something the United Nations had once done, and that the Earth Union had then continued. The Earth Union had ceased to exist in all but name two years earlier at the height of the First Recession. Corporations now seemed to wield the most power on and off of Earth, and their 'voters' were their customers. Nations relied on these industrial giants for both their valuable business and their lucrative investments.

THE SECOND RECESSION (2200-2215)

The nations of Earth would need these resources, as, in 2200, the oil reserves dried up (or at least became unprofitable to exploit). Oil was desperately needed, not for fuel, since most vehicles ran from hydrogen fuel cells and power-stations were fusion-based and required helium-3. Petroleum was needed by the plastics and the chemicals industries. Bioplastic was in use, but its reliance on vegetable matter grown in fields that could otherwise be used to feed starving millions, meant that oil, tried and tested over centuries and understood by all chemical engineers and plant designers, remained the primary choice. Now oil reserves on distant moons and on harsh planets would have to provide a source for that oil. The Oil Crisis of 2200 initiated a Second Recession lasting for 15 years. Some colonies and outposts were temporarily abandoned due to cost-saving exercises. In Macapa, Brazil, an extraordinary construction was begun: a vast oil pipeline stretching from the surface all the way to the edge of the atmosphere and beyond out to a distant orbit. This Trans Atmospheric Petroleum Pipeline (TAPP) was funded by a unique corporate consortium for the Community of American States. It was a statement: 'once this pipeline is completed – the recession will end'. And end it did. Oil flowed, prices dropped, economies began to flourish and a new era began in human history.

The colonization of space was not some great altruistic project, an attempt to 'spread humanity across the stars' or to 'explore the unknown', it was all about profit. No nation could justify such an undertaking, and so the corporations sought their profits out there on asteroids and icy moons, on planets good and bad. Mineral extraction, logging and oil drilling were the big industries in space and a vast infrastructure of tugs, space stations, cargo starships, spaceports and terminals was constructed.



INSURRECTION ON TAU CETI (2215-)

Colonies *were* established, mostly within 4 parsecs of Earth, but these large-scale settlements today typically service the extraction industries operating out toward the Outer Rim and beyond. Most serve as way stations and technical bases for the large corporations and their space enterprises. The oldest of the Off-World colonies, Tau Ceti, has been plunged into war during the past decade. The planet had been settled separately by two nations: China and the United States of America, but with the fall of China during the First Recession, the Chinese colony was abandoned. Only after the recession did a brutal counter-insurgency war on Tau Ceti begin - factions supported by the new competing Chinese nations struggled to capture Shulin, the Chinese colony. When the UCC ruled that only independence for Tau Ceti (both American and Chinese colonies) would end the crisis, the United States was invited to act as peacekeeper within the Chinese colony, until a stable government could be formed and independence for Tau Ceti organized. From that moment in 2215, the Chinese factions turned on the American peacekeepers with great ferocity. The USA has gotten embroiled in a savage counter-insurgency that is costing thousands of lives every year and trillions of dollars annually. Washington cannot let the Chinese colony fail, to do so would endanger the safety and security of the successful American colony, Lindbergh, on the same world. With the Chinese and American colonies both united and independent, the USA would have a strong and powerful pro-American ally in the Near Earth Zone.

ECO COLLAPSE

The impact of ten billion people and their high technology lifestyles had a great impact on planet Earth, and then of course there has been the effect of global warming – a fact, no matter what its source. The late 22nd century saw rising sea levels, droughts and rampant desertification, with millions of hectares of farmland being lost to the encroaching sand dunes. Climates began a permanent shift; large parts of the United States, for example, have become hot, almost rainless and dry. A blistering sun kills crops in the fields and scorching winds blow in desert sands to cover them over. Many American cities suffer from water shortages making life hard for the poorest in society. Expert water management in North America has prevented this climatic shift from becoming a agricultural catastrophe, however, and intensive farming can still continue to feed the people in the cities. While America and Europe bravely struggle to stave off total eco-collapse, there are many nations that have failed. Kyrgyzstan has been thoroughly 'desertified', as has Mali, Chad and the Sonoran region of Mexico.

Many American cities are dry and dusty; a bourbon-colored haze fills the air, cutting visibility to only a few miles. On bad days only the tops of distant skyscrapers and arcologies can be seen rising up above the orange-brown smog. 'You don't have to go to other stars to find a planet where the atmosphere is trying to kill you,' said senator Terry Enderman, famously. 'The air above L.A. is as nasty as it gets. Drop a 21st century Angelino in here and I bet they'd classify it as "alien".'

Today the corporations are all-mighty; they wield power and budgets that dwarf many nations on Earth. And much of their power comes from their role as suppliers of petroleum, helium-3, minerals and other raw materials to an ever-hungry (and ever growing) population. Reiner-Gama has claimed by force much of the solar system as a corporate preserve, and it continues to supply Earth with valuable raw materials – at a price. But competition from the off-world mining and drilling colonies has increased year-by-year.

MONEY

The currency of the American sector of space and of both the United States and its Commonwealth of American States, is the American Dollar ($). For large purchases, such as aircraft or starships, millions of dollars are required. In **HOSTILE** these amounts are denoted with a capital 'M' suffix - such as $23M. While electronic funds, accessed via bank cards and automated transfer, are normal on Earth, elsewhere cash is king. Time lag between planets and moons, and between star systems, means that cash is carried by starship crews, company men and other travellers. Stored currency can also be carried on the standard American ID card – the Pass Card. For more details, see the Equipment Guidelines chapter

THE NATIONS OF EARTH

Political instability on Earth toppled the world government that had kept the peace for half a century, now the biggest players on the global stage are three political blocs, each led by a strident and powerful nation. These alliances are:

Community of American States (CAS)

This includes most of the nations of North and South America, and includes Britain. It is dominated and led by the United States of America. The CAS is a massive power bloc and has access to numerous space-launch facilities as well as the incredible Trans-Atmospheric Petroleum Pipeline that transfers off-world oil from starships arriving from distant planets.

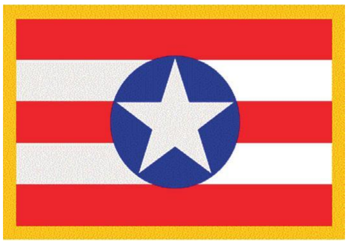
Western European Union (WEU)

This trans-national entity once existed in the 1960's and 1970's and was re-established around sixty years ago. It's ancient predecessor, the European Union, dissolved in the early 21st century. The Western European Union is a tight, German-dominated circle of high-tech, western European neighbours.

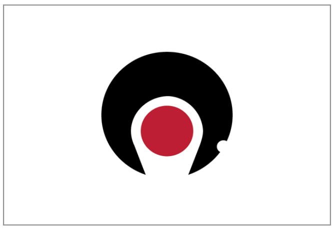
Asia-Pacific Partnership (APP)

Following China's collapse and balkanization during the First Recession, Japan was ready to step up to lead the nervous nations of East Asia. The chaos and economic uncertainty of the recession helped to pull Japan's neighbours into that country's powerful orbit. Tokyo now rules most of East Asia through this Asia-Pacific Partnership. Raw materials and skilled migrants flow into a resurgent Japan, whilst exported goods flow out to the other nations of the APP. Of the three Chinese splinter states, only the Federation of China (the industrialized eastern seaboard of China) has refused to join the APP.

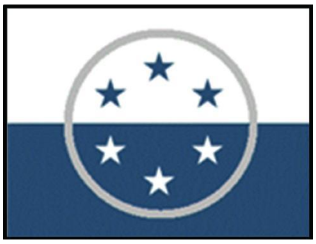
The alliances are similar in nature to the trans-national groups of the 21st century; entities like the Arab League, ASEAN, the Commonwealth of Independent States, NAFTA and others. But the difference here is the lack of an equal say - terrible shocks in the global economy and aggressive threats of war by some large nations, forced smaller nations to seek the patronage of the biggest and most powerful. These powerhouses now dominate the alliances that they are (ostensibly) equal members of, but their actual power is magnified greatly by the loyalty and fealty of the other nations within the union. In the CAS, for example, US military forces conduct peacekeeping forces inside war-torn member states, and US-based corporations enjoy significant benefits within the alliance. Member nations of the blocs are still mostly free and independent, yet many have become almost dependencies of their powerful patron. A similar arrangement existed during the First Cold War, when Soviet Russia presided over a Warsaw Pact of ostensibly free sovereign nations.



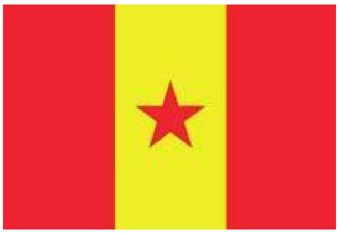
Community of American States



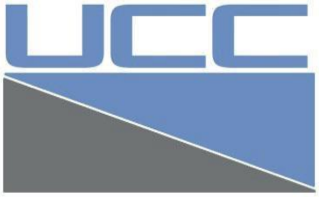
Asia Pacific Partnership



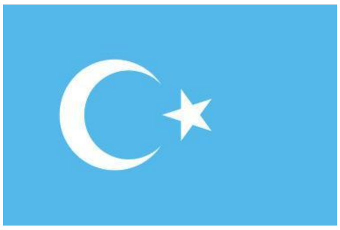
Western European Union



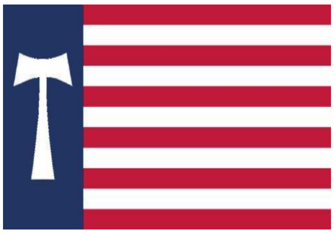
Federal Republic of China



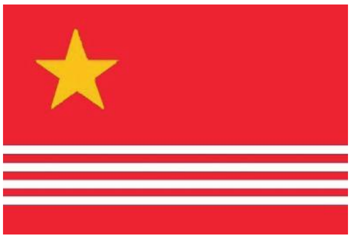
United Corporate Combine



Republic of Xinjiang



Tau Ceti Free State



People's Republic of Guandong

RISE OF THE CORPORATION

While the Earth become more disunited, the corporations found that they had many things in common and were forced to find ways to arbitrate the many disputes and trade deals that had previously gone through the world government. In 2170 the United Corporate Combine (the UCC, or simply 'Combine') was established. It is a permanent council for arbitration and corporate law that was established by the major corporations to handle matters of international and interstellar law. It manages several offices which focus on specific areas, including the Mining Regulation Commission (MRC), the Interstellar Commerce Organization (ICO) and the Extra-Solar Colonization Administration (ESDA).

Several of Earth's corporations are extremely powerful; like the nations that they feed from, many have abandoned public shareholdings. The most powerful are privately owned, run by families and clans. Each corporation is comprised of multiple companies with robust internal transactions, all controlled by a single, near all-powerful chairman that acts both as manager and de-facto owner of the entire enterprise. Each is vertically organized, with manufacturing, supply, finance and banking, and distribution all in-house. Sub-companies are created to run these sectors and benefit the umbrella organization.

The bank and general trading company sit at the heart of the corporation. Typical concerns of a corporation are banking, insurance, steel, trading, manufacturing, electronics, gas and power, chemical and interstellar development and ship-building. The general trading company (the heart) concerns itself with logistics, plant development, and both international and interstellar resource exploration. These corporations trade in many markets (or diversify) for security, and all the component companies own shares in one another's companies, thus preventing hostile take-overs, allowing the monitoring and disciplining of firms and easing pressure on management, allowing the corporation to focus on long-term goals. These 23nd century corporations resemble the South Korean *chaebol* and the Japanese *keiretsu* of the 21st century, both of which formed in the post-war world of the 1950s. All the corporations have plenty of power on Earth amongst the political blocs, and everyone knows that if *they* fail, they bring the global economies down with them. Many politicians are also sponsored by these corporations. They are powerful: who regulates a transnational company if not a transnational body that is transparent and responsive to global stakeholders? Such a body does not exist. The UN was disbanded long-ago.

Red Dragon
Taking you home ...
Red
Dragon
EXPORT
PREMIUM
PRESS

THE MAJOR CONGLOMERATES

Leyland-Okuda	Built on an engineering pedigree, Leyland-Okuda is rapidly diversifying. Based in Dubai.
Erebus	Growing to power on Antarctic oil, this British-based conglomerate continues to focus on resource extraction.
Voroncovo	Based on high-tech companies and on security, this Russian conglomerate has since branched out.
Wu-Ketai	The most powerful of the Asia Pacific conglomerates, Wu-Ketai owns some of the best technical brands.
Reiner-Gama	Although its mining and oil drilling operations are restricted to the Solar System, Reiner-Gama constructs key components for the aerospace industry.
Tharsis	Once a Martian conglomerate, Tharsis is now US-based and active in all fields. Its chairman is 223 year-old Compton de Vaille.
Matsuyama	This Japanese conglomerate has a number of successful defense corporations, but is also known for colonial development and genetic products.

PROMISE
FamilyMart
レイク
水野屋酒店

OFFWORLD DEVELOPMENT

3

From 2150, hyperdrive starships have been travelling out from Earth to colonize, settle, explore and exploit the strange new worlds around alien suns. Today, in 2225, there are over 300 surveyed planets in the interstellar space surrounding Earth. A ring of stars surrounds Earth at a distance of around 4 parsecs or so and these were the target systems for the first interstellar colonies. They have continued to develop and grow ever since. The competing power blocs of Earth used hyperspace to explore and settle areas of space in different directions to create quite discrete (political) sectors of settlement.

The three sectors are the American, the European (or 'German') and the Japanese. HOSTILE, in keeping with the science-fiction zeitgeist of the 1970s and early 1980s, focusses on the activities of corporations and governments within the American-explored area of space: HOSTILE's American Sector.

STAR MAPPING

Surveyed space extends out from Earth in all directions forming a bubble of interstellar space approximately 40 parsecs (130.4 light years) in diameter. Beyond this limit are the billions of stars and planets that exist within the rest of the Milky Way Galaxy - untapped and undiscovered resources for the many generations to come. This 40 parsec sphere of human activity has not been uniformly settled, of course. The very first worlds to be discovered and explored are close to Earth, they have a history of development going back more than sixty years and surround the Earth in a Core area that extends 4 parsecs out from Earth. Beyond the populated colony worlds of the Core is a much broader disc of lesser-travelled and more sparsely populated star systems, home to mining outposts, science stations, logging camps, start-up colonies and drilling rigs. This is the Outer Rim, and it extends out from the Core for another 6 parsecs. Beyond the Outer Rim is the rarely travelled, sparsely settled Frontier, home to only drill rigs, distant mining installations and scientific outposts.

Astronomers and development vice presidents have carved up human-occupied space into fifteen arbitrary rectangles – functional mapping units known as 'zones'. These zones are well defined astrographic regions of space that are 10 parsecs long and 8 parsecs wide. Zones are sub-divided into 80 'hexes' each hex measuring roughly a single parsec across (flat edge to flat edge). Each hex has the potential to hold a single important star and its attendant star system. Parsec-hexes serve as the building blocks of hyperspace navigation routes. The maps included with this book provide detail for six zones of occupied space: the **Near Earth Settlement Zone** (NEZ), the **Fomalhaut Settlement Zone** (FOM), the **Capella Extraction Zone** (CAP), **New Concessions** (NEW) and **Extraction Zones 6 and 9** (EZ6 and EZ9).

Astrography Definitions

Core – An 8 parsec diameter disc of colonized worlds around Earth.

Frontier – Beyond the Outer Rim, a region of isolated outposts and science stations.

Hex – An arbitrary mapping unit, roughly one parsec across.

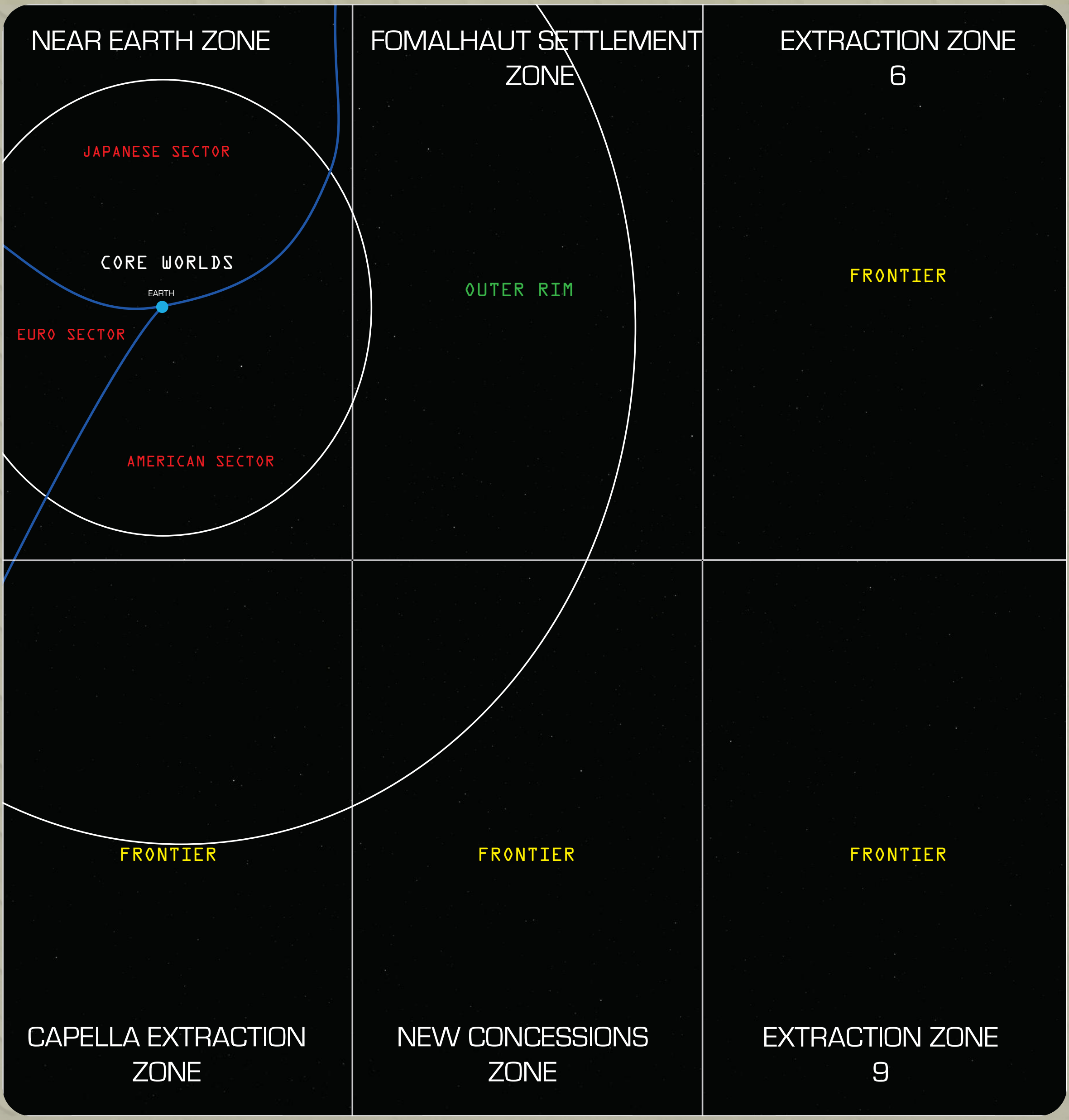
Light Year – Standard unit of distance, equal to 9.461 trillion kilometres

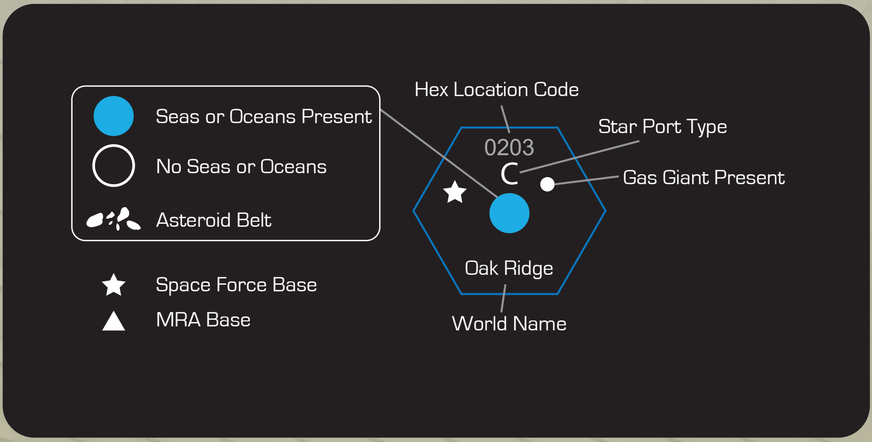
Outer Rim – A 20 parsec –diameter disc of sparsely populated worlds around Earth.

Parsec – A distance equal to 3.26 light years.

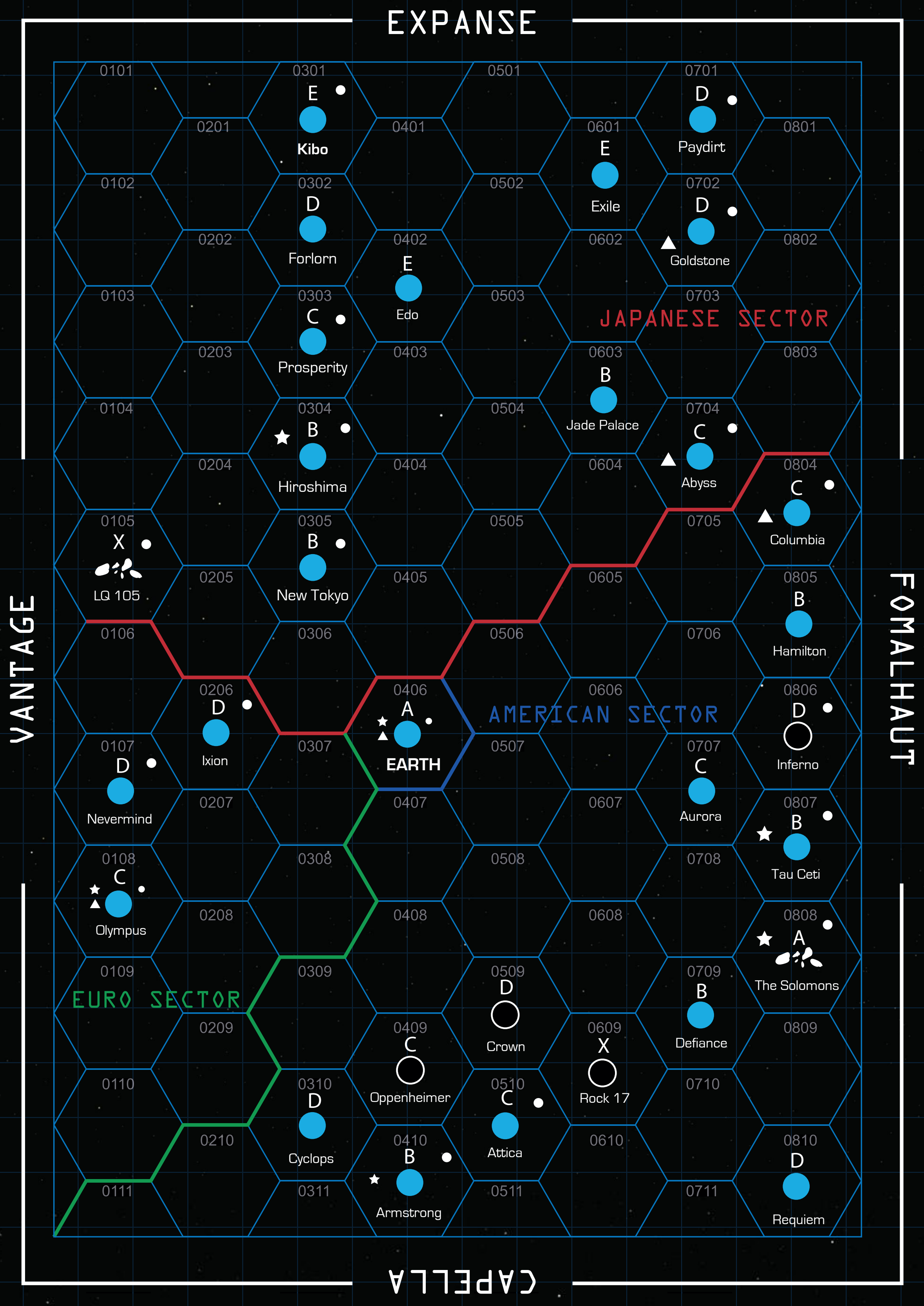
Sector – A non-astrographic term to describe a broad political area of control or domination amongst the stars. e.g. the Japanese Sector.

Zone – An arbitrary mapping unit, a zone is one of fifteen rectangles of space, each measuring 8 hexes by 10 hexes. e.g. Extraction Zone 6.


NEAR EARTH ZONE
FOMALHAUT SETTLEMENT ZONE
EXTRACTION ZONE 6
JAPANESE SECTOR
CORE WORLDS
EARTH
EURO SECTOR
AMERICAN SECTOR
OUTER RIM
FRONTIER
FRONTIER
FRONTIER
FRONTIER
CAPELLA EXTRACTION ZONE
NEW CONCESSIONS ZONE
EXTRACTION ZONE 9

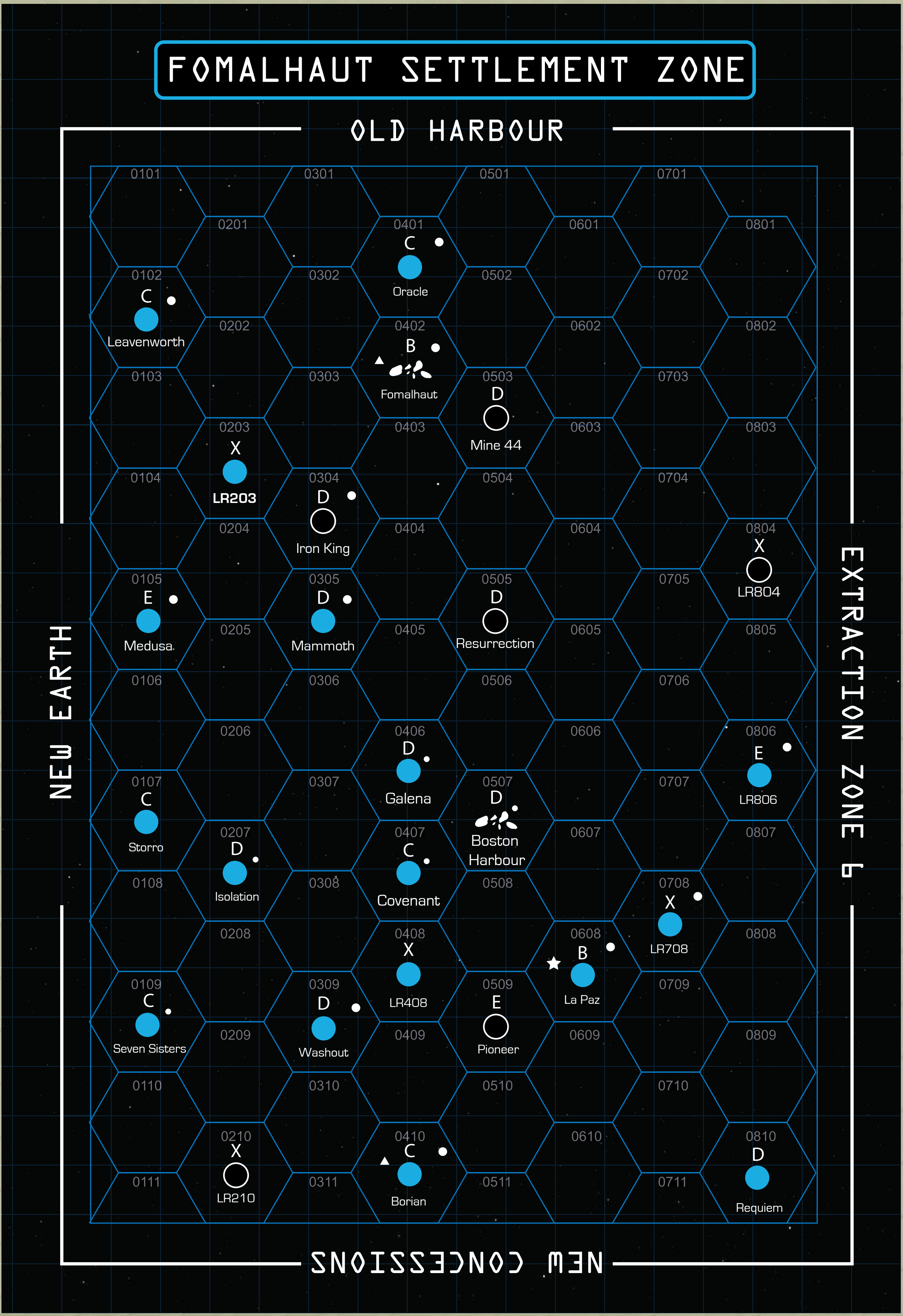

Seas or Oceans Present
No Seas or Oceans
Asteroid Belt
Space Force Base
MRA Base
Hex Location Code
0203
C
Star Port Type
Gas Giant Present
Oak Ridge
World Name

NEAR EARTH ZONE


EXPANSE
VANTAGE
FOMALHAUT
CAPELLA
JAPANESE SECTOR
AMERICAN SECTOR
EURO SECTOR
0101
0102
0103
0104
0105 X LQ 105
0106
0107 D Nevermind
0108 C Olympus
0109
0110
0111
0201
0202
0203
0204
0205
0206 D Ixion
0207
0208
0209
0210
0301 E Kibo
0302 D Forlorn
0303 C Prosperity
0304 B Hiroshima
0305 B New Tokyo
0306
0307
0308
0309
0310 D Cyclops
0311
0401
0402 E Edo
0403
0404
0405
0406 A EARTH
0407
0408
0409 C Oppenheimer
0410 B Armstrong
0501
0502
0503
0504
0505
0506
0507
0508
0509 D Crown
0510 C Attica
0511
0601 E Exile
0602
0603 B Jade Palace
0604
0605
0606
0607
0608
0609 X Rock 17
0610
0701 D Paydirt
0702 D Goldstone
0703
0704 C Abyss
0705
0706
0707 C Aurora
0708
0709 B Defiance
0710
0711
0801
0802
0803
0804 C Columbia
0805 B Hamilton
0806 D Inferno
0807 B Tau Ceti
0808 A The Solomons
0809
0810 D Requiem

NEAR EARTH ZONE

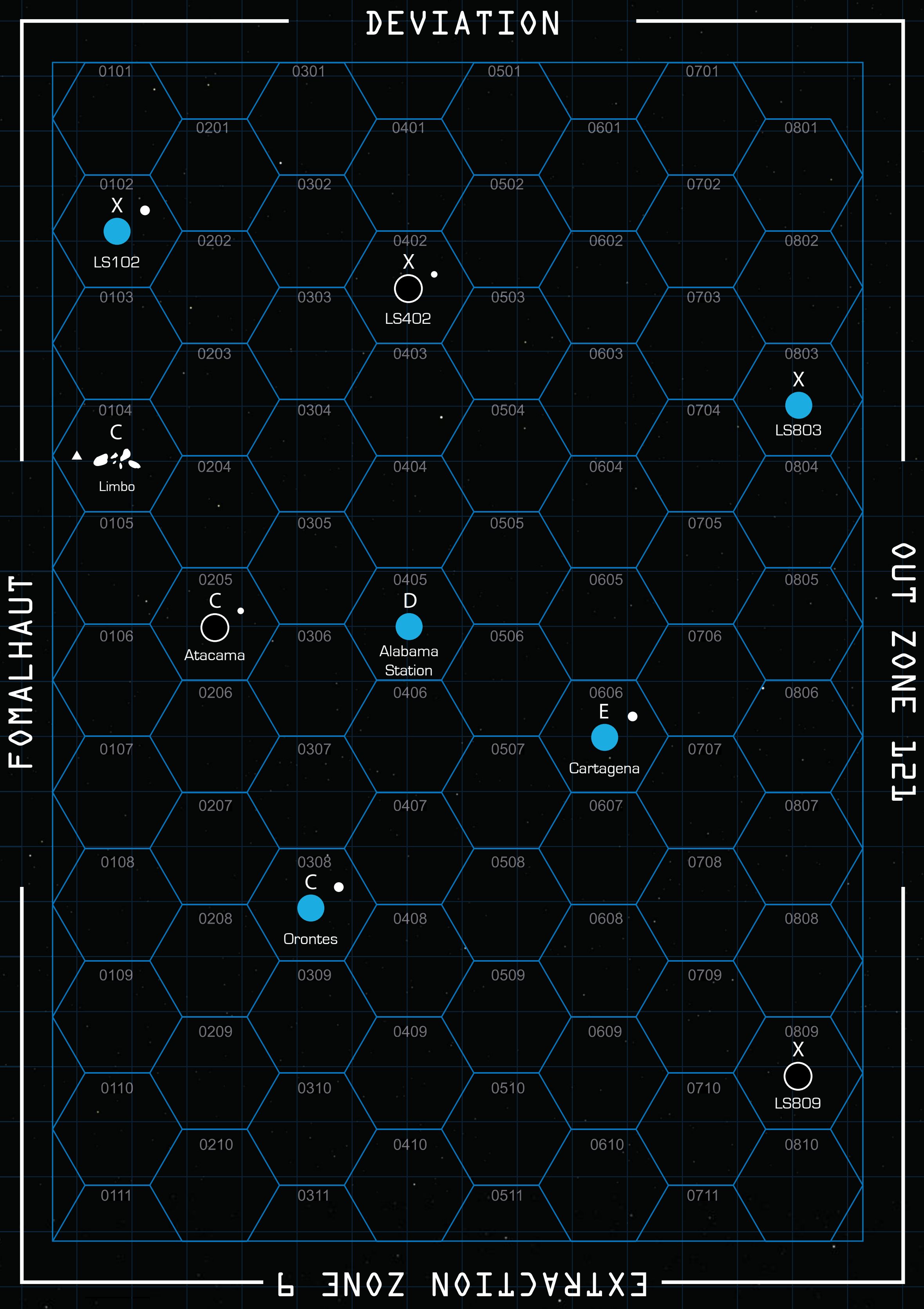
Name	Hex	UWP	Remarks	
LQ105	0105	X000000-0	Asteroid	G
Nevermind	0107	D577487-C	Garden, Non-Ind	G
Olympus	0108	C6A2469-C	Non-Industrial	
Ixion	0206	D5C5314-C	Fluid Oceans	G
Kibo	0301	E200312-C	Vacuum	G
Forlorn	0302	DA25258-C		
Prosperity	0303	C559614-C	Non-Ind, Water World	G
Hiroshima	0304	B774633-C	Agri, Garden, Non-Ind	G
New Tokyo	0305	C6586B8-C	Agricultural, Non-Ind	G
Cyclops	0310	D331512-C	Poor, Non-Industrial	
Edo	0402	E445312-C		
EARTH	0406	A877976-C	Industrial, Garden	G
Oppenheimer	0409	C6C0454-C	Desert, Non-Industrial	
Armstrong	0410	B486665-C	Agricultural, Rich, Non-Ind	G
Crown	0509	D300373-C	Vacuum	
Attica	0510	CA63342-C	Non-Industrial	G
Exile	0601	E000243-C	Asteroid	
Jade Palace	0603	B952651-C	Poor, Non-Industrial	
Rock 17	0609	XD00000-0		
Paydirt	0701	D899543-C	Non-Industrial	G
Goldstone	0702	D593333-C		G
Abyss	0704	C779643-C	Non-Industrial	G
Aurora	0707	C552552-C	Non-Industrial, Poor	
Defiance	0709	B868744-C	Garden, Agricultural, Rich	
Columbia	0804	C554645-C	Agricultural, Garden, Non-Industrial	G
Hamilton	0805	B554696-C	Non-Industrial, Agricultural, Garden	
Inferno	0806	DC106B8-C	Non-Agricultural	G
Tau Ceti	0807	B444762-C	Agricultural	G
The Solomons	0808	A000675-C	Asteroid, Non-Industrial, Non-Agricultural	G
Requiem	0810	D8A1200-C	Fluid Oceans	


FOMALHAUT SETTLEMENT ZONE
OLD HARBOUR
NEW EARTH
EXTRACTION ZONE 6
NEW CONCESSIONS
0101
0201
0301
0401 C Oracle
0501
0601
0701
0801
0102 C Leavenworth
0302
0502
0702
0202
0402 B Fomalhaut
0602
0802
0103
0303
0503 D Mine 44
0703
0203 X LR203
0403
0603
0803
0104
0304 D Iron King
0504
0704
0204
0404
0604
0804 X LR804
0105 E Medusa
0305 D Mammoth
0505 D Resurrection
0705
0205
0405
0605
0805
0106
0306
0506
0706
0206
0406 D Galena
0606
0806 E LR806
0107 C Storro
0307
0507 D Boston Harbour
0707
0207 D Isolation
0407 C Covenant
0607
0807
0108
0308
0508
0708 X LR708
0208
0408 X LR408
0608 B La Paz
0808
0109 C Seven Sisters
0309 D Washout
0509 E Pioneer
0709
0209
0409
0609
0809
0110
0310
0510
0710
0210 X LR210
0410 C Borian
0610
0810 D Requiem
0111
0311
0511
0711

FOMALHAUT SETTLEMENT ZONE

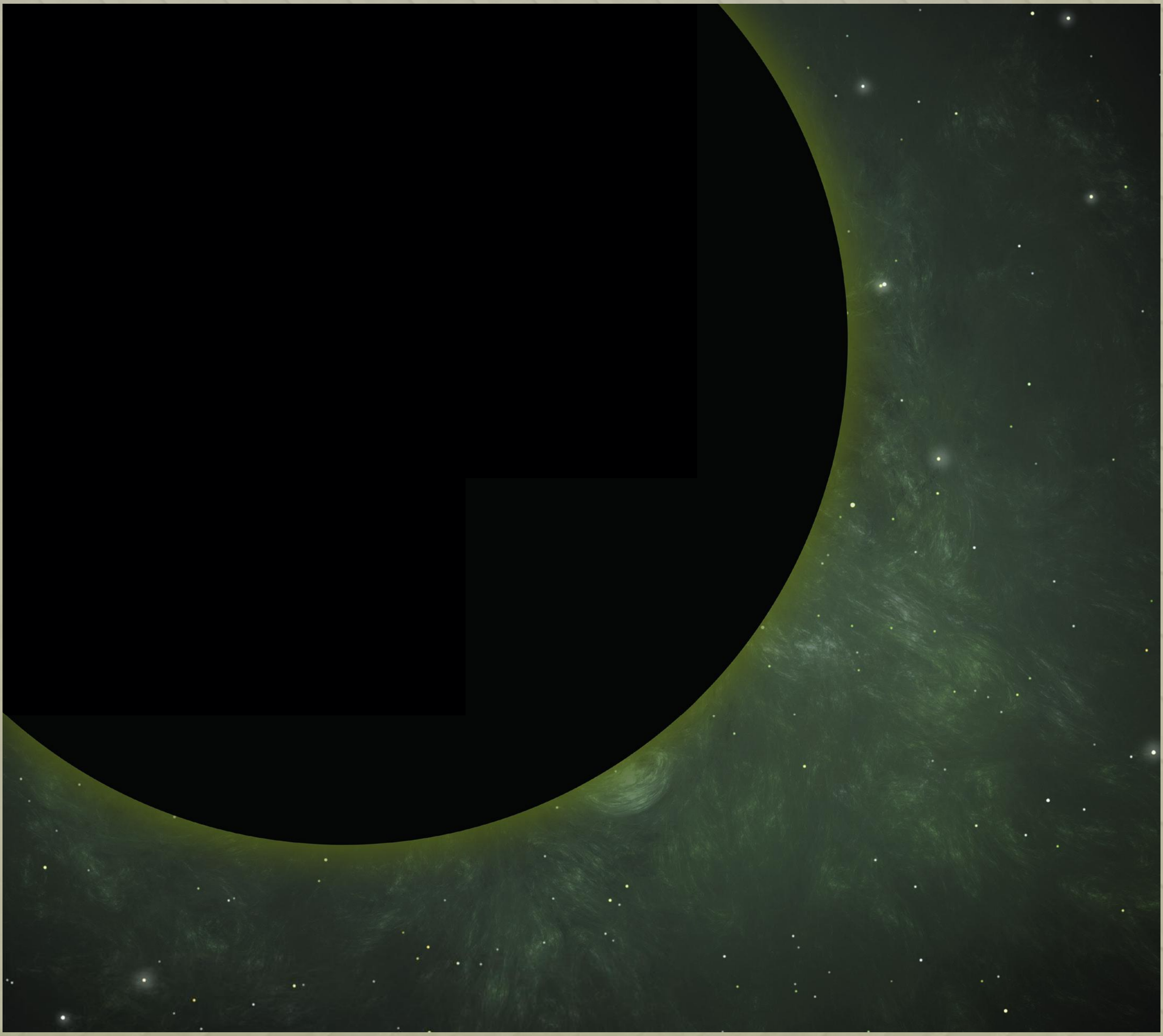
Name	Hex	UWP	Remarks	
Leavenworth	0102	C3125B8-C	Non-Ind, Ice Capped	G
Medusa	0105	E347345-C	Garden	G
Storro	0107	C444423-C	Garden, Non-Ind	
Seven Sisters	0109	CD54443-C	Garden, Non-Ind	G
LR203	0203	X639000-0		
Isolation	0207	D211388-C	Ice-Capped	G
LR210	0210	XC30000-0	Desert	
Iron King	0304	DB90431-C	Desert, Non-Ind	G
Mammoth	0305	D868420-C	Garden, Non-Ind	G
Washout	0309	D665365-C	Garden	G
Oracle	0401	C3215B9-C	Poor, Non-Ind	G
Fomalhaut	0402	B000670-C	Asteroid, Non-Ind, Non-Ag	G
Galena	0406	D263300-C		G
Covenant	0407	C790546-C	Non-Ind	G
LR408	0408	X122000-0		
Borian	0410	C444393-C	Garden	G
Mine 44	0503	D100356-C	Vacuum	
Resurrection	0505	D890444-C	Desert	
Boston Harbour	0507	D000311-C	Asteroid	G
Pioneer	0509	E100210-C	Vacuum	
La Paz	0608	B554486-C	Garden, Non-Ind	G
LR708	0708	X9A2000-0	Fluid Oceans	G
LR804	0804	X120000-0	Poor, Desert	
LR806	0806	E553401-C	Poor, Non-Ind	G

EXTRACTION ZONE 6

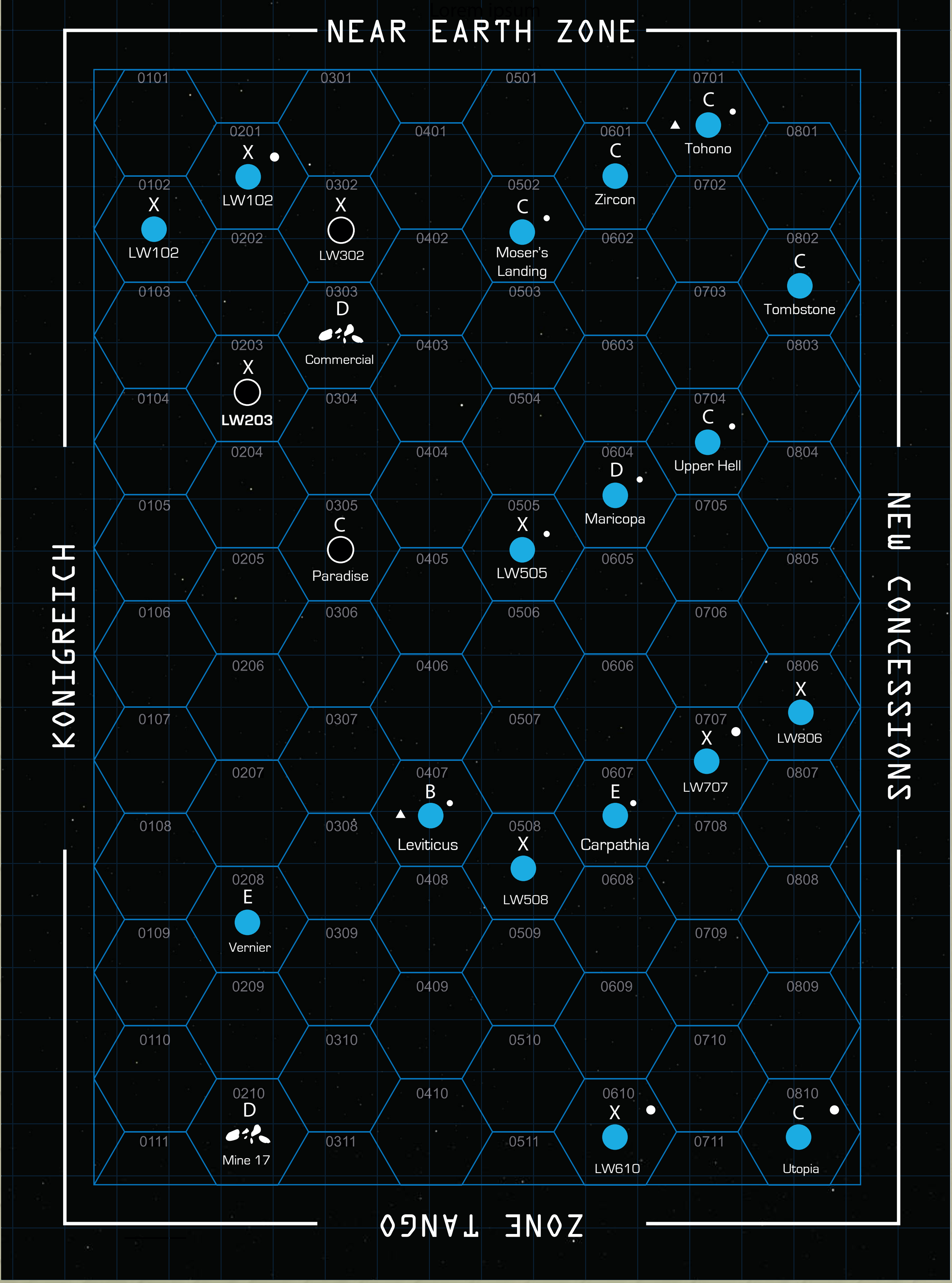

DEVIATION
FOMALHAUT
OUT ZONE 121
EXTRACTION ZONE 9
0101
0102 X LS102
0103
0104 C Limbo
0105
0106
0107
0108
0109
0110
0111
0201
0202
0203
0204
0205 C Atacama
0206
0207
0208
0209
0210
0301
0302
0303
0304
0305
0306
0307
0308 C Orontes
0309
0310
0311
0401
0402 X LS402
0403
0404
0405 D Alabama Station
0406
0407
0408
0409
0410
0501
0502
0503
0504
0505
0506
0507
0508
0509
0510
0511
0601
0602
0603
0604
0605
0606 E Cartagena
0607
0608
0609
0610
0701
0702
0703
0704
0705
0706
0707
0708
0709
0710
0711
0801
0802
0803 X LS803
0804
0805
0806
0807
0808
0809 X LS809
0810

EXTRACTION ZONE 6

Name	Hex	UWP	Remarks	
LS102	0102	XA6A000-0	Water World	G
Limbo	0104	C000410-C	Asteroid, Non-Ind	
Atacama	0205	C790123-C	Desert	G
Orontes	0308	C438342-C		G
LS402	0402	X100000-0		G
Alabama Station	0405	D223413-C	Poor, Non-Ind	
Cartagena	0606	E262110-C		G
LS803	0803	X58A000-0	Water World	
LS809	0809	X580000-0	Desert	



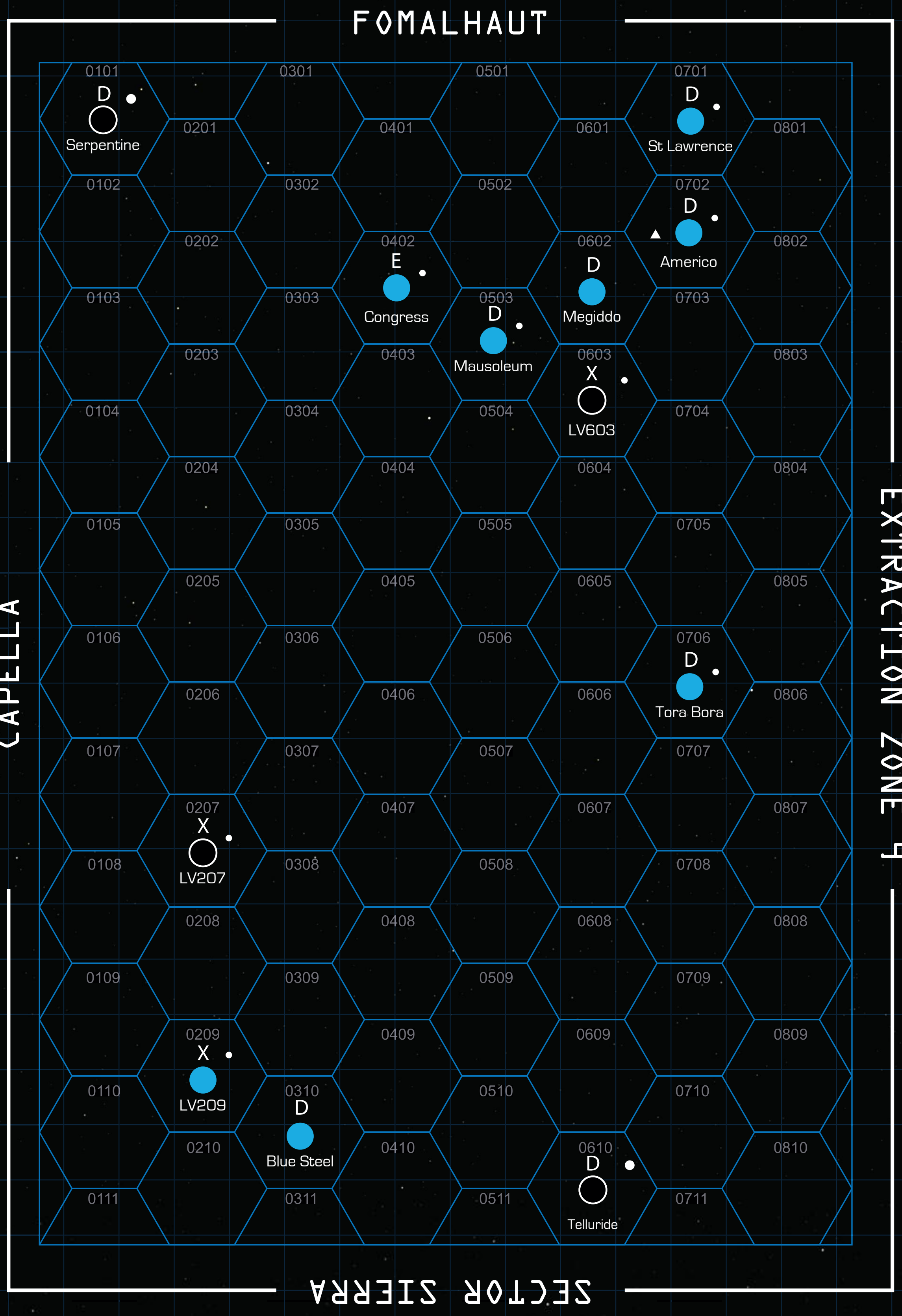
CAPELLA EXTRACTION ZONE


NEAR EARTH ZONE
KONIGREICH
NEW CONCESSIONS
ZONE TANGO
0101
0102 X LW102
0103
0104
0105
0106
0107
0108
0109
0110
0111
0201 X LW102
0202
0203 X LW203
0204
0205
0206
0207
0208 E Vernier
0209
0210 D Mine 17
0301
0302 X LW302
0303 D Commercial
0304
0305 C Paradise
0306
0307
0308
0309
0310
0311
0401
0402
0403
0404
0405
0406
0407 B Leviticus
0408
0409
0410
0501
0502 C Moser's Landing
0503
0504
0505 X LW505
0506
0507
0508 X LW508
0509
0510
0511
0601 C Zircon
0602
0603
0604 D Maricopa
0605
0606
0607 E Carpathia
0608
0609
0610 X LW610
0701 C Tohono
0702
0703
0704 C Upper Hell
0705
0706
0707 X LW707
0708
0709
0710
0711
0801
0802 C Tombstone
0803
0804
0805
0806 X LW806
0807
0808
0809
0810 C Utopia

CAPELLA EXTRACTION ZONE

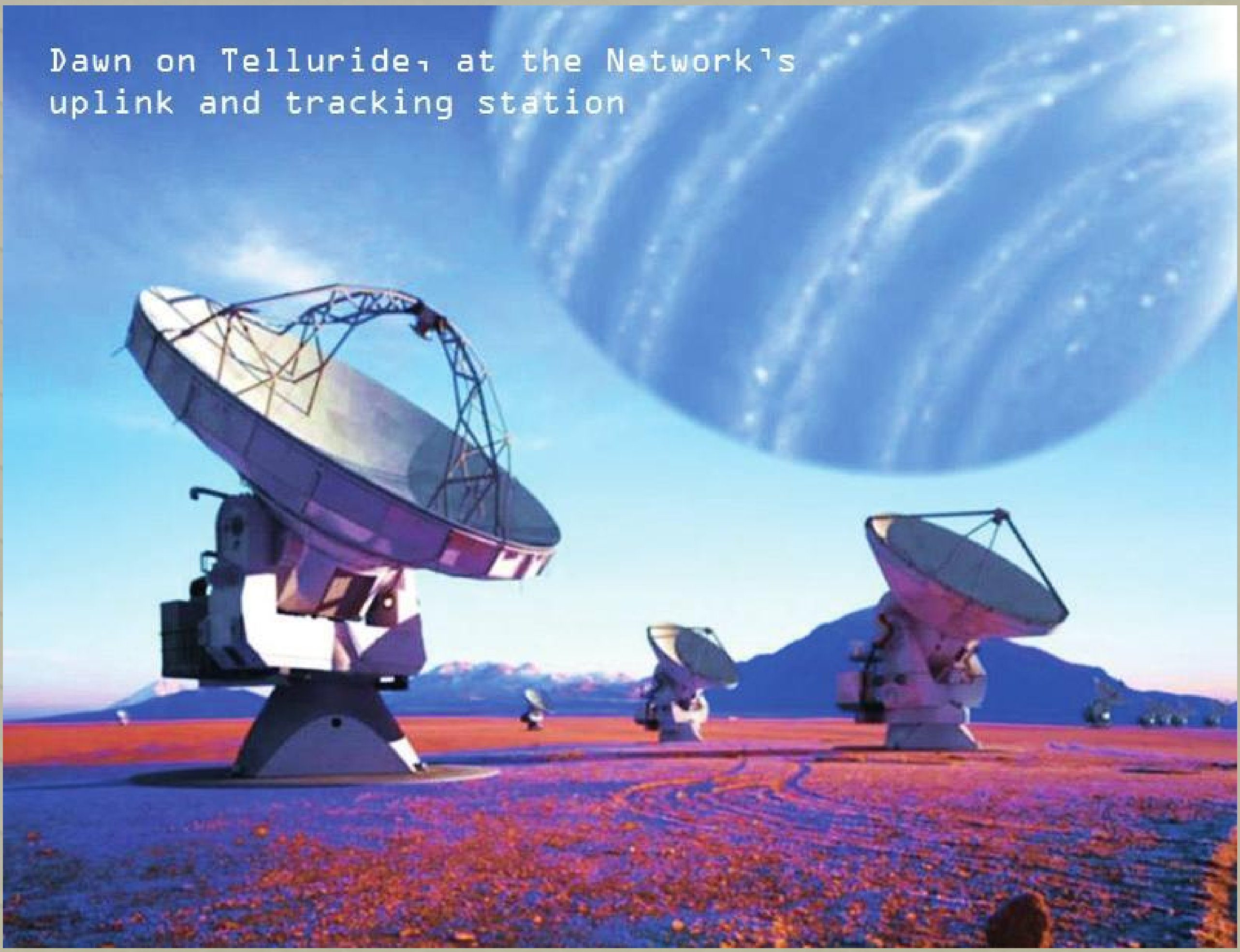
Name	Hex	UWP	Remarks	
LW102	0102	X463000-0	Poor	
LW201	0201	X465000-0	Garden	G
LW203	0203	X200000-0	Vacuum	
Vernier	0208	E426310-C		
Mine 17	0210	D000224-C	Asteroid	
LW302	0302	XB60000-0	Desert	
Commercial	0303	D000313-C	Asteroid	
Paradise	0305	C150123-C	Desert, Poor	
Leviticus	0407	BA85636-C	Rich, Garden, Non-Ind	G
Moser's Landing	0502	C5A4446-C	Fluid Oceans, Non-Ind	G
LW505	0505	X8B2000-0	Fluid Oceans	G
LW508	0508	X466000-0	Garden	
Zircon	0601	CB63400-C	Non-Ind	
Maricopa	0604	D9754A8-C	Garden, Non-Ind	G
Carpathia	0607	E532311-C	Poor	G
LW610	0610	X9A7000-0	Fluid Oceans	G
Tohono	0701	C975457-C	Garden, Non-Ind	G
Upper Hell	0704	C211455-C	Ice Capped, Non-Ind	G
LW707	0707	X333000-0	Poor	G
Tombstone	0802	C473314-C		
LW806	0806	X697000-0	Garden	
Utopia	0810	CAB1431-C	Fluid Oceans, Non-Ind	G

NEW CONCESSIONS ZONE

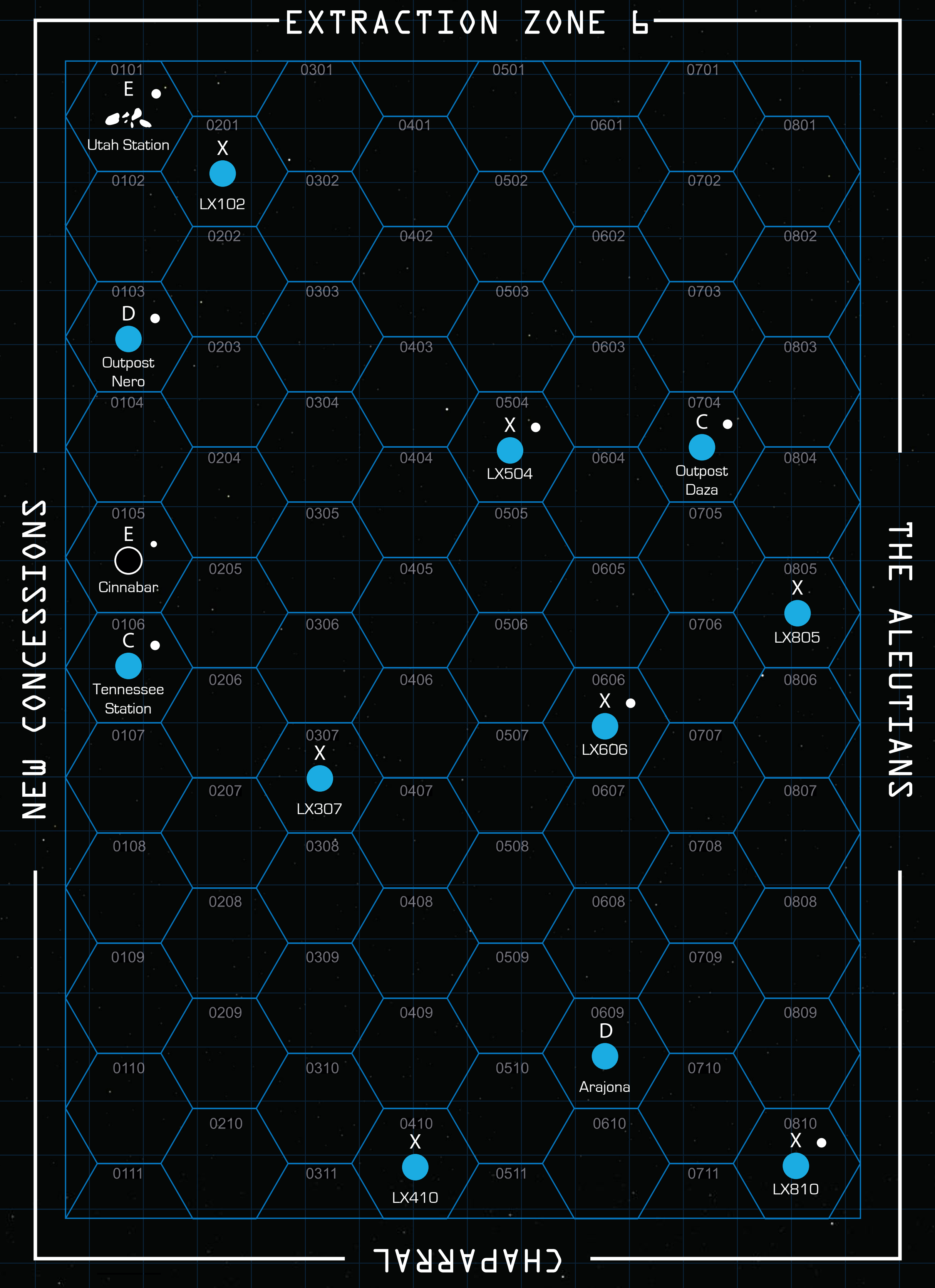

FOMALHAUT
CAPELLA
EXTRACTION ZONE 9
SECTOR SIERRA
0101
D
Serpentine
0102
0103
0104
0105
0106
0107
0108
0109
0110
0111
0201
0202
0203
0204
0205
0206
0207
X
LV207
0208
0209
X
LV209
0210
0301
0302
0303
0304
0305
0306
0307
0308
0309
0310
D
Blue Steel
0311
0401
0402
E
Congress
0403
0404
0405
0406
0407
0408
0409
0410
0501
0502
0503
D
Mausoleum
0504
0505
0506
0507
0508
0509
0510
0511
0601
0602
D
Megiddo
0603
X
LV603
0604
0605
0606
0607
0608
0609
0610
D
Telluride
0701
D
St Lawrence
0702
D
Americo
0703
0704
0705
0706
D
Tora Bora
0707
0708
0709
0710
0711
0801
0802
0803
0804
0805
0806
0807
0808
0809
0810

NEW CONCESSIONS ZONE

Name	Hex	UWP	Remarks	
Serpentine	0101	D590355-C	Desert	G
LV207	0207	X800000-0	Vacuum	G
LV209	0209	X3A1000-0	Fluid Oceans	G
Blue Steel	0310	D324410-C	Non-Ind	
Congress	0402	E774295-C	Garden	G
Mausoleum	0503	DAAA231-C	Fluid Oceans	
Megiddo	0602	D121258-C	Poor	G
LV603	0603	X870000-0	Desert	G
Telluride	0610	D970520-C	Desert, Non-Ind	G
St. Lawrence	0701	D994445-C	Non-Ind, Garden	G
Americo	0702	D583441-C	Non-Ind	G
Tora Bora	0706	D7A7243-C	Fluid Oceans	G


Dawn on Telluride, at the Network's uplink and tracking station

EXTRACTION ZONE 9


EXTRACTION ZONE 6
NEW CONCESSIONS
THE ALEUTIANS
CHAPARRAL
0101 E Utah Station
0201 X LX102
0103 D Outpost Nero
0105 E Cinnabar
0106 C Tennessee Station
0307 X LX307
0410 X LX410
0504 X LX504
0606 X LX606
0609 D Arajona
0704 C Outpost Daza
0805 X LX805
0810 X LX810
0102
0104
0107
0108
0109
0110
0111
0202
0203
0204
0205
0206
0207
0208
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0210
0301
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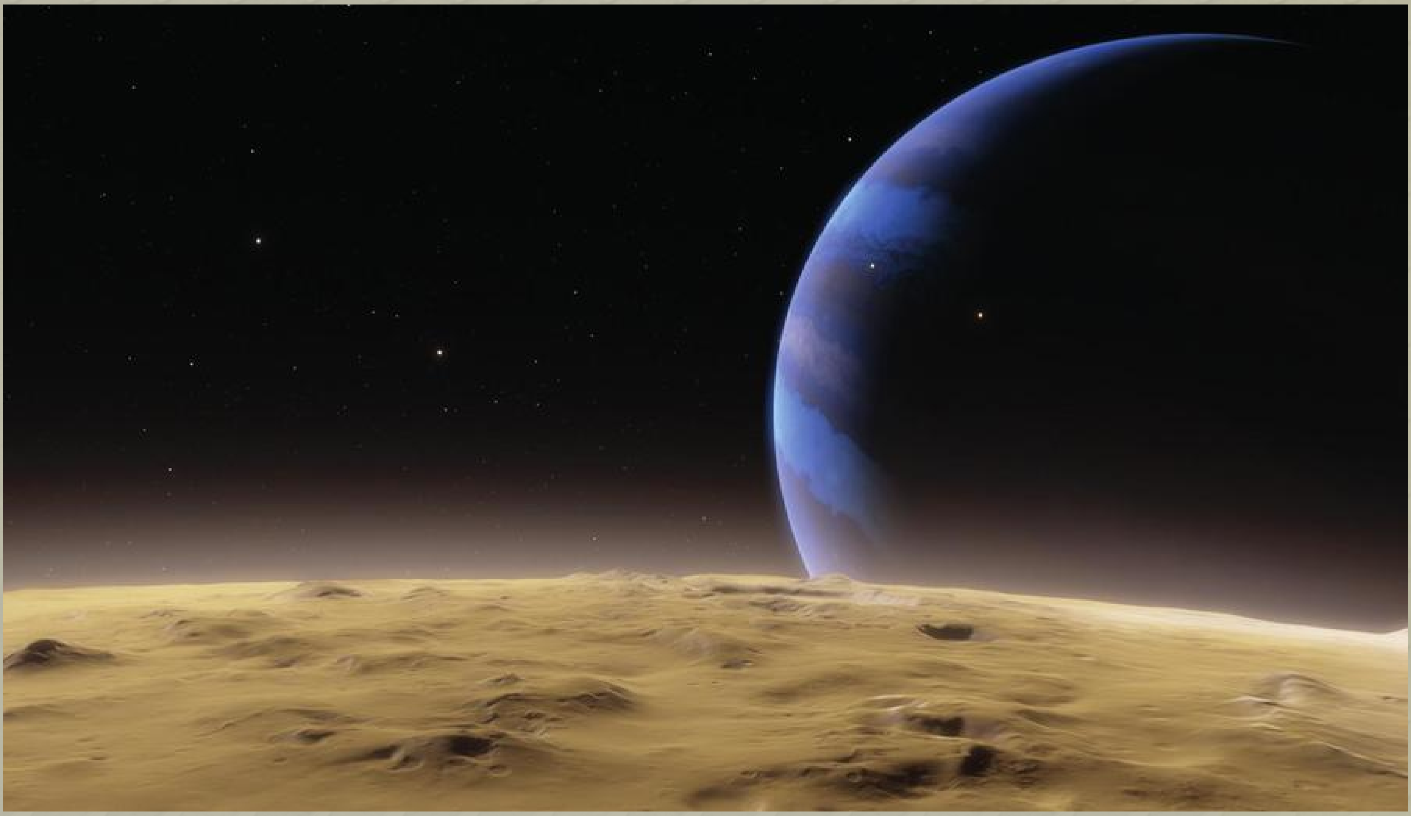
0802
0803
0804
0806
0807
0808
0809

EXTRACTION ZONE 9

Name	Hex	UWP	Remarks	
Utah Station	0101	E000316-C	Asteroid	G
Outpost Nero	0103	D31258A-C	Ice-Capped	G
Cinnabar	0105	E6B0225-C		G
Tennessee Station	0106	C433355-C	Poor	G
LX201	0201	X635000-0		
LX307	0307	X8B2000-0	Fluid Oceans	
LX410	0410	X98A000-0	Water World	
LX504	0504	X503000-0	Vacuum, Ice-Capped	G
LX606	0606	X644000-0	Garden	G
Arajona	0609	D76A415-C	Non-Ind, Water World	
Outpost Daza	0704	C9B5320-C	Fluid Oceans	G
LX805	0805	X211000-0	Ice-Capped	
LX810	0810	X481000-0		G



WORLD DATA

The entries for human-occupied worlds that are listed in the next few pages include important information that is presented in a set format: the Universal World Profile (UWP). This is a concise one-line coding to encapsulate data on an individual world in a manner that, with a little practice, can be quickly and easily read. Detailed descriptions and explanations of these entries can be found in the companion, **HOSTILE Rules Handbook.**

- Hex
- Name
- Starport
- Size
- Atmosphere
- Hydrographics
- Population
- Government
- Law Level
- Technology Level
- Bases (if any are present)
- Trade Codes
- Gas Giants (whether present or not)

Hex

The hex value refers to the location of the parsec that the world occupies. Each zone of space is divided into 80 hexes, arranged in eight columns of ten. Individual hexes are numbered; 0101, 0102, 0103 in the first column, for example.

Name

In science fiction, worlds often have a descriptive name that is often used by the people who live there – Tatooine, Arrakis, Skaro etc. Planets and moons occupied by humans are christened according to the type of planet, the mood of the settlers, or the bureaucratic stuffiness of the corporate authority. Surveyors meanwhile, routinely designate one rock, moon or planet in an unsettled system as a 'mainworld'. This lifeless world is given a codename by the ICO starting with 'L' for Limited Duration, followed by a single letter denoting the zone (New Concessions is V, Capella Extraction Zone is W), and ending with a three-digit code representing the mapping hex within that zone. So the chilly planet orbiting Ross 619 is designated LW102.

Starport

Facilities for the landing, docking, off-loading refueling and maintenance of starships, are found across human occupied space.

Starport Class		Best Fuel	Annual Maint.	Shipyard Capacity	Max. Ship Size (tons)	Possible Bases
A	Excellent	Refined	Yes	Can construct starships and non-starships	100,000	USSC, MRA
B	Good	Refined	Yes	Can construct non-starships	60,000	USSC, MRA
C	Routine	Unrefined	No	Can perform reasonable repairs	40,000	MRA
D	Poor	Unrefined	No	None	20,000	MRA
E	Frontier	None	No	None	10,000	None
X	None	None	No	None	-	None

A Class Starport - Hundreds of starships can be accommodated and both crews and passengers can spend time in hotels, restaurants, lounges and other entertainment facilities. It can provide refined fuel, top quality maintenance facilities and a prodigious cargo-handling service. Ships can be bought and sold here, and new ships are being constructed at integrated shipbuilding yards. All A class starports include a high port, a huge space station in orbit that transfers goods, equipment and people between surface and orbit.

B Class Starport - The class B will have a shipyard capable of building non-starships and small craft and is able to provide refined fuel. There are good maintenance facilities present that can carry out a starship's annual maintenance if required. Nearly all class B starports include an orbital high port. The navigation aids, traffic control and emergency services are top notch and usually extremely reliable. There will be hotels and other leisure facilities at the port, though not quite as elaborate as those of a typical A class.

C Class Starport - The type C starport is small in size and has limited facilities, but most see a large and steady flow of traffic. This is probably the lowest class of port that can be 'depended on' to provide an efficient service, with class D and E ports being extremely hit and miss in quality and efficiency. Generally only unrefined fuel is available, but there are repair yards that are able to address most maintenance issues. Traffic control and starship handling will be able to cope with several landings and take-offs simultaneously and crews can often expect to see hangers, as well as landing pads.

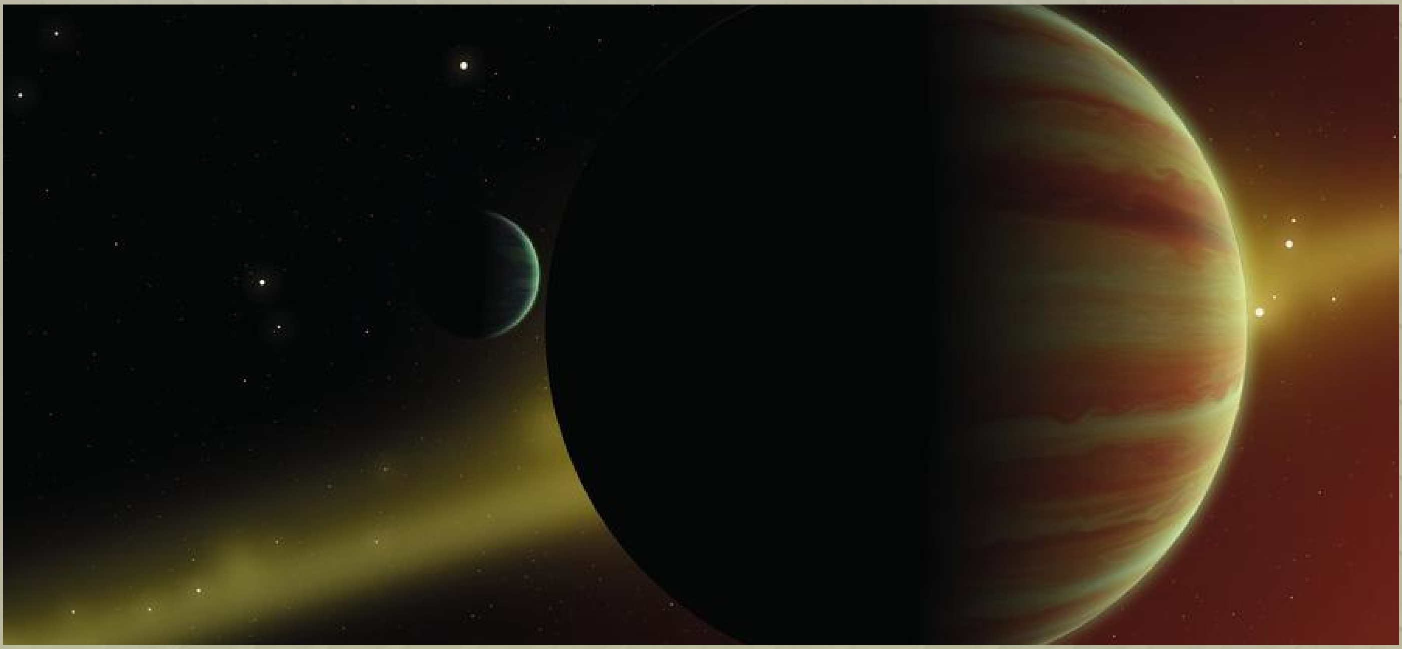
D Class Starport - The class D is the smallest landing facility that would be clearly recognisable as a starport. It is a minor port, with a handful of landing pads, a cluster of buildings and a very modest traffic control system. There will be a security fence surrounding the facility. Only unrefined fuel is available, and there are no repair facilities to speak of. Minor work might be carried out, but anything requiring major parts will need to be done off-world, or equipment and spares shipped in after a considerable delay. Class D ports are often established to serve a particular need, perhaps the shipping of mineral ores, or the importation of supplies for a colony or settlement.

E Class Starport – A landing pad or pads have been marked out or constructed and there will be radio contact with the local facility during the approach. There is no available fuel or repair capacity but there will probably be a navigation beacon and landing lights. Remote mining stations often have E Class starports to enable regular supply shuttles to land. Basic cargo loading and unloading equipment may exist if the E Class serves a large industrial outpost.

X Class Starport – There is no starport and no facilities of any kind

Size

Digit	World Size	Surface Gravity (Gs)	Earth Radii	Earth Masses
0	800 km (typically an asteroid)	Negligible	-	-
1	1,600 km	0.05	0.125	0.002
2	3,200 km	0.15	0.25	0.016
3	4,800 km	0.25	0.375	0.053
4	6,400 km	0.35	0.5	0.125
5	8,000 km	0.45	0.625	0.244
6	9,600 km	0.7	0.75	0.422
7	11,200 km	0.9	0.875	0.67
8	12,800 km	1.0	1	1
9	14,400 km	1.2	1.125	1.25
10 (A)	16,000 km	1.5	1.25	2.5
11 (B)	17,600 km	1.8	1.375	3.75
12 (C)	19,200 km	2.0	1.5	5
13 (D)	20,800 km	2.2	1.625	6.25
14 (E)	22,400 km	2.3	1.75	7.5
15 (F)	24,000 km	2.5	1.875	8.75
16 (G)	25,600 km	2.6	2	10
SGG	Small Gas Giant (Neptune)	-	2-6	17.2
LGG	Large Gas Giant (Jupiter)	-	6+	1318.7



Atmosphere

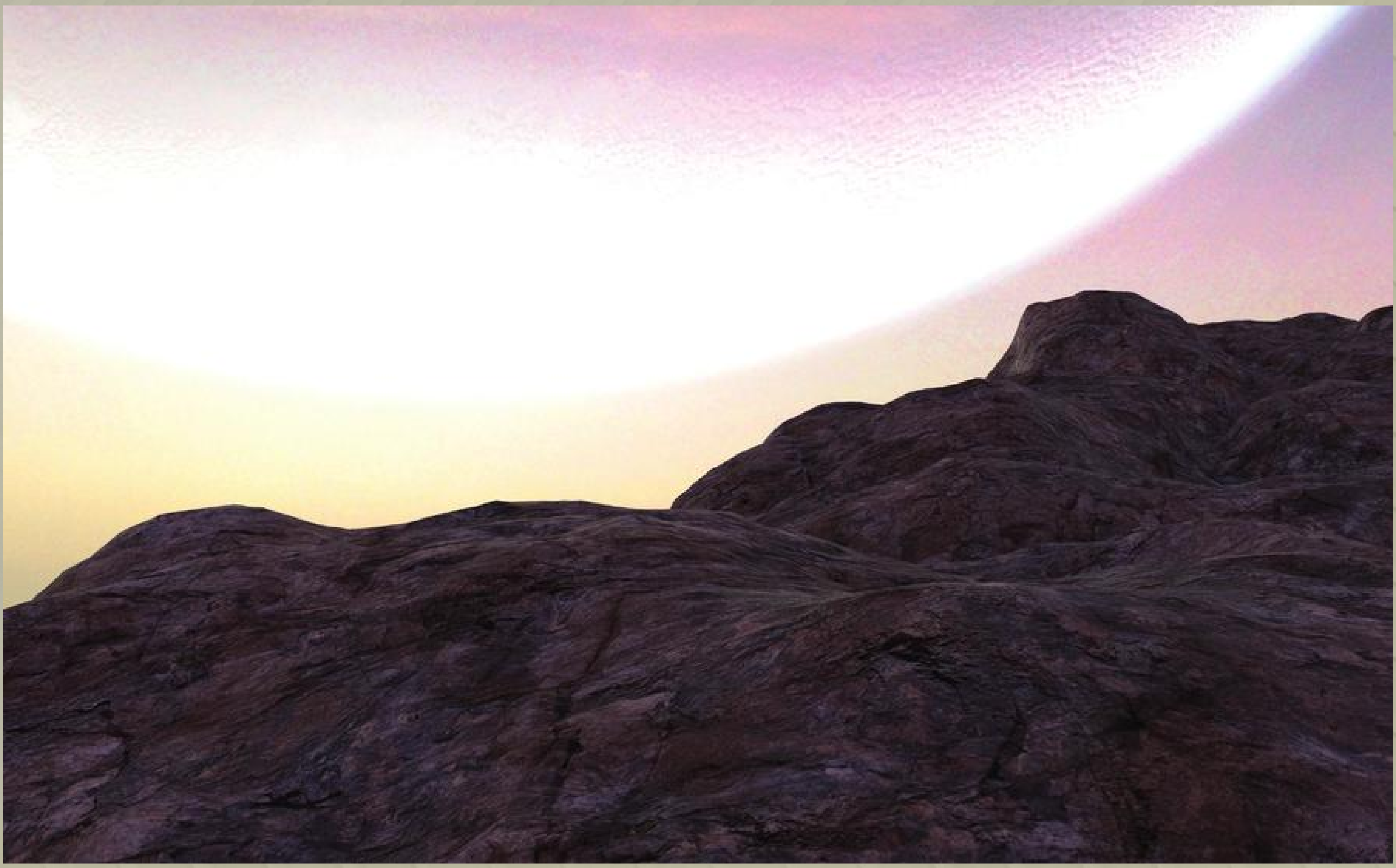
Digit	Atmosphere	Pressure	Survival Gear Required
0	None	0.00	Vacc Suit
1	Trace	0.001 to 0.09	Vacc Suit
2	Very Thin, Tainted	0.1 to 0.42	Surface Mask
3	Very Thin	0.1 to 0.42	Surface Mask
4	Thin, Tainted	0.43 to 0.7	
5	Thin	0.43 to 0.7	
6	Standard	0.71–1.49	
7	Standard, Tainted	0.71–1.49	Surface Mask
8	Dense	1.5 to 2.49	
9	Dense, Tainted	1.5 to 2.49	Surface Mask
10 (A)	Exotic	Varies	Oxygen Tanks & Mask
11 (B)	Corrosive	Varies	Vacc Suit
12 (C)	Insidious	Varies	Vacc Suit

Hydrographics

Digit	Hydrographic Percentage	Description
0	0%–5%	Desert world
1	6%–15%	Dry world
2	16%–25%	A few small seas.
3	26%–35%	Small seas and oceans.
4	36%–45%	Wet world
5	46%–55%	Large oceans
6	56%–65%	Large oceans
7	66%–75%	Earth-like world
8	76%–85%	Water world
9	86%–95%	Only a few small islands and archipelagos.
10 (A)	96–100%	Almost entirely water.

Population

Digit	Population	Range	Comparison
0	None	0	-
1	Few	10+	A tiny farmstead or a single family
2	Hundreds	100+	A village
3	Thousands	1,000+	
4	Tens of thousands	10,000+	Small town
5	Hundreds of thousands	100,000+	Average city
6	Millions	1,000,000+	Large city
7	Tens of millions	10,000,000+	Mega city, European Nation
8	Hundreds of millions	100,000,000+	USA
9	Billions	1,000,000,000+	Present day Earth
10 (A)	Tens of billions	10,000,000,000+	



Government

Most outposts and colonies in the Outer Rim and Frontier are established and run by corporations, in this case the Government characteristic represents the 'style' of management. Type 4 (Representative Democracy), for example might suggest that employees are shareholders and will have a great say in how things are run.

Type	Government
0	None
1	Company/Corporation
2	Participating Democracy
3	Self-Perpetuating Oligarchy
4	Representative Democracy
5	Feudal Technocracy
6	Captive Government
7	Balkanization
8	Civil Service Bureaucracy
9	Impersonal Bureaucracy
10 (A)	Charismatic Dictator
11 (B)	Non-Charismatic Leader
12 (C)	Charismatic Oligarchy
13 (D)	Religious Dictatorship
14 (E)	Religious Autocracy
15 (F)	Totalitarian Oligarchy

Law Level

Planetary law level provides a rough idea of how many regulations, laws and security checks a traveller from off-world will encounter. Although the table above breaks these numbers down to establish what type of weapons can be carried and what possessions are illegal, the world builder is best served by taking the Law Level to be more of a guideline.

Digit	Descriptor	Not Allowed
0	No Law	No restrictions.
1	Low Law	Poison gas, explosives, undetectable weapons, weapons or mass destruction
2	Low Law	Portable energy weapons (except ship-mounted weapons)
3	Low Law	Heavy weapons
4	Medium Law	Light assault weapons and submachine guns
5	Medium Law	Personal concealable weapons
6	Medium Law	All firearms except shotguns and stunners; carrying weapons discouraged
7	High Law	Shotguns
8	High Law	All bladed weapons, stunners
9	High Law	Any weapons outside one's residence
10(A)+	Extreme Law	Any weapons allowed at all.

Tech Level

In Cepheus Engine, worlds vary quite dramatically in their development of technology (their ‘Tech Level’), ranging from stone age (TL 0) to ultra-high tech (TL 15). In **HOSTILE**, spaceflight and in particular hyperspace-flight, is so relatively new that tech levels on planets within the Outer Rim are all generally similar. ‘Modern’ 2225 AD technology is taken out to new outposts and colonies and serves the inhabitants there. There is a single interstellar culture (particularly within an individual sector, such as the American Sector) and a single everyday tech level of **TL 12**. Where disparities occur, then the trade codes (see below) should address the issue. Of particular importance is the world trade code ‘Non-Industrial’. This indicates that there are too few people to support a manufacturing base which means that most factory-made items will have to be imported from off-world. Although these worlds demand sophisticated products that they cannot manufacture themselves, the trade table suggests that they themselves have little to offer the interstellar community except raw materials.

For those players using the Cepheus Engine RPG, what Tech Levels are applicable to the **HOSTILE** universe? Human society generally enjoys a Tech Level of around TL12, but various areas of development are slightly more advanced, or slightly less advanced than that.

Technical Area	Applicable TL	Notes
Cybernetics	-	none allowed
Communications	TL 10	No holographics; FTL communications possible
Computers & Robotics	TL 15	Human-level synthetic androids; no touchscreens; data held on data cards.
Starship Drives	TL 15	Hyperdrive and reaction drives; **no** grav drives.
Vehicles	TL 10	**No** anti-gravity vehicles – wheels, tracks, helicopters, submarines, surface ships, jets and tilt-rotor and prop aircraft only.
Weaponry	TL 10	-

Bases

The presence of government bases is noted on the UWP after the Tech Level characteristic. Bases that feature on the planetary listings include United States Space Command bases, Japan Aerospace Defence Force bases, Deutsche Raumwaffe (German starforce) bases and Mining Regulatory Agency bases.

Trade Codes

Trade codes are assigned based on a world's UWP values. Trade classifications are broad labels that tell the players and referee what kind of goods might be bought cheaply on-planet and what might be sold at a profit. More than that, though, the classification gives us a look at the broad economic base of the planet. Does it import or export? What do people do? How does the world fit into the economy of the interstellar community?

***Agricultural* -** Assume an agricultural world is able to produce a huge surplus of food that can be shipped out through the starport.

***Asteroid* -** Asteroids are often mining colonies that produce various ores and crystals for use in industry, but others may be small colonies, prisons, private retreats and factories. ***Desert* -** An economy based on a true desert world like this will be concerned with survival first and foremost. Water will be a top resource, either taken out of the air or drilled from aquifers deep underground. In desperate situations, water may even be shipped in.

***Fluid Oceans* -** Fluid Oceans are planets with oceans not made up of water, but of other liquids (liquid methane, ethanol, etc.). Petrochemical fuels will be found in abundance and exported off-world.

***Garden* —** Almost Earth-like, blessed with a temperate climate, wide oceans and fertile soils. It will also have a diverse biosphere of plants and animals.

***Ice-Capped* -** The term ice-capped in **HOSTILE** means 'has liquid water beneath an icy crust'. These liquid water oceans are postulated on Europa, Enceladus and on other moons of the Solar System as well.

***Industrial* -** The atmosphere of an industrial world is unbreathable, either due to natural contaminants, or because it was ruined during the long road to planetary industrialization. These worlds are massive exporters of electrical goods, all kinds of appliances, manufactured goods, weaponry, vehicles, advanced materials and alloys and robots. In return they will require vast amounts of raw material. Earth is currently the only 'industrial' world.

***Non-Agricultural* -** With many mouths to feed but lacking the climate and water resources needed to feed them. It is dependent on outside sources for its food, textiles and other organic products.

***Non-Industrial* -** Too few people live here to support an adequate manufacturing economy. Consequently many types of factory-made goods will need to be imported from off-world.

***Poor* -** A backwater, a place few visit; it has a thin atmosphere and insufficient water resources to support a strong economy. This is a dry and unattractive world.

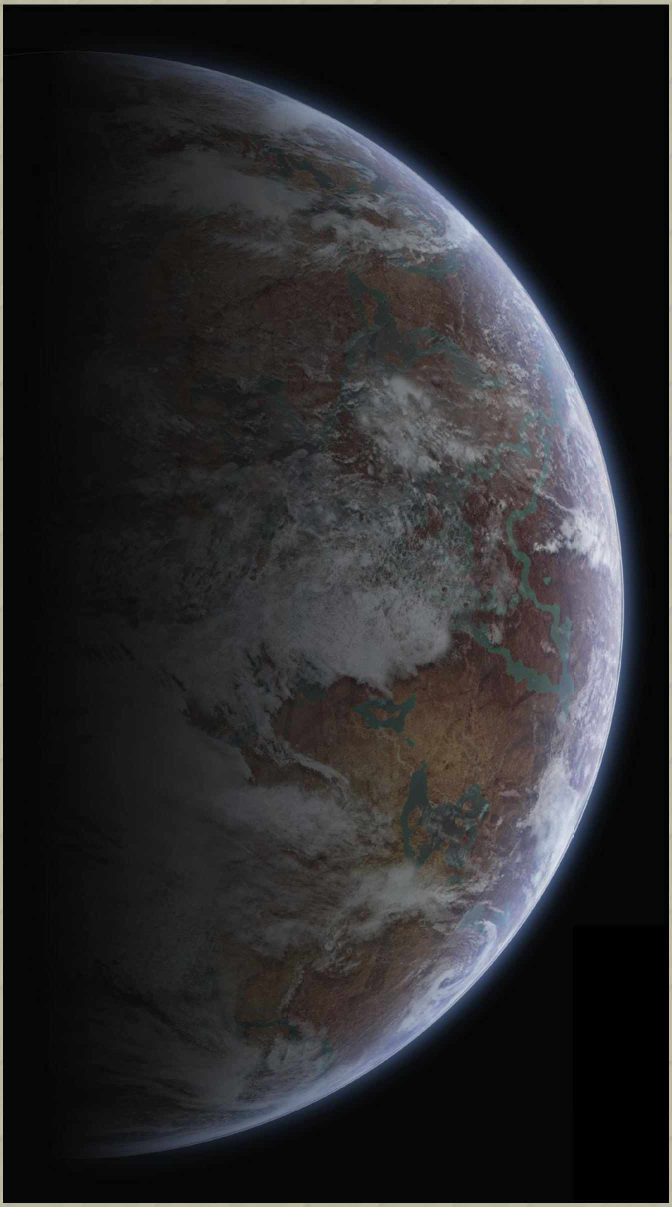
***Rich* —** A luxurious retreat that boasts innumerable diversions, entertainments and attractions. Its economy will generally be self-sustaining, but it will rely heavily on imports.

***Water World* -** Aquaculture and fishing provide food, whilst seabed mining and oil drilling supply fuel, building materials and other resources. Exotic chemicals and drugs might also be sourced from the oceans.

***Vacuum* -** Planets without atmosphere must shelter their populations within airtight habitats and domes. Although food can be grown hydroponically, there will still be a great need for consumables from off-world. Mining will typically form the bulk of any exports from a vacuum world.

Gas Giants

The presence of any gas giant planets is noted on the UWP by a 'G' (or the absence of it). If further detail is required, a large gas giant (Jupiter-sized or larger) can be noted as LGG, whilst a small gas giant (Neptune or Uranus-sized, for example) can be noted as SGG. There may be more than one gas giant within the star system.



Climate

Referees may apply a temperature label to a world based on its UWP and the needs of the scenario.

Frozen [-100ºC or lower]
Too cold for human habitation, protective gear required: Moon in shade, Pluto.

Cold [-15ºC or lower]
Lower limits of human habitability: Yellowknife in winter, Mars.

Cool [-10ºC to -1ºC]
Habitable zone, but cooler on average than Earth: Toronto in winter.

Temperate [0ºC to 24ºC]
Habitable zone, Earth average climate, similar to Boston or Paris.

Warm [25ºC to 34ºC]
Habitable zone, but warmer on average than Earth: Los Angeles in summer.

Hot [35 ºC or higher]
Upper limits of human habitability: Mojave Desert in summer.

Inferno [100ºC or higher]
Too hot for humans - protective gear required: Moon in sunlight, Mercury in daylight

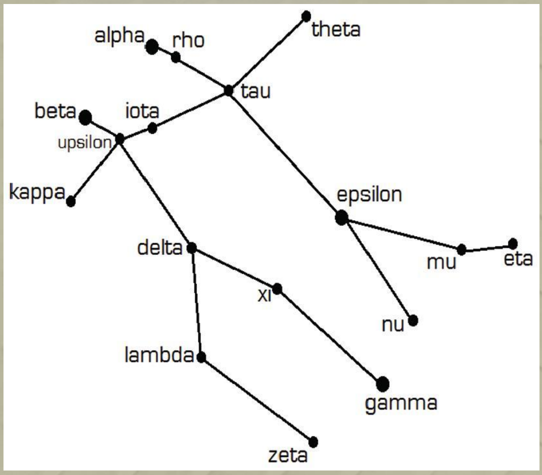
Star Types

The Catalogue of Off-World Colonies (on pages 50-53) identifies the star or stars around which the world orbits. The use of real star names helps us to reinforce a gritty, no-nonsense and realistic atmosphere during game-play. If you cast an eye over the names of stars, they may appear quite confusing. Several naming conventions are at work simultaneously. The most important naming convention is that of the major constellations, the bright stars that have been visible to humans for centuries. Patterns of stars in the sky were given a name, like Gemini or Orion or Eridanus. The stars were then ranked in order of brightness, using the Greek alphabet, with the brightest being alpha, the second brightest beta and so on. Look at the star map of the constellation Gemini, below:

This is how we arrive at the star names Kappa Ceti, for example, or Beta Hydri. Now, the very brightest stars were often given actual names by the first Arab astronomers, and those names persist into modern times. So Alpha Geminorum is also known as Castor, while Beta Geminorum is known as Pollux. Alpha Piscis Austrini is better known as Fomalhaut, and appears with this name on the star maps. With the advent of telescopes, more stars were discovered within all of the constellations of the sky, and astronomers soon ran out of Greek letters. Numbers began to be used for these dimmer stars; 94 Ceti, 58 Eridani and 51 Pegasi are stars like this.

Many stars are recent additions to astronomy and feature in star catalogues compiled by astronomers. Men like Wilhelm Gliese, Max Wolf, Jerome Lalande, Frank Elmore Ross, Henry Draper (HD) and Friedrich Struve gave their names to dozens of stars in Earth's neighbourhood. Some stars (prefixed 'HR') appear in the Harvard Revised Photometry Catalogue, whilst a number of others (Herschel 5173, Luhman 16, Luyten's Star, Kapteyn's Star and Teegarden's Star) are simply (and aptly) named after their discoverers.

Greek Letters	
1	Alpha
2	Beta
3	Gamma
4	Delta
5	Epsilon
6	Zeta
7	Eta
8	Theta
9	Iota
10	Kappa
11	Lambda
12	Mu
13	Nu
14	Xi
15	Omicron
16	Pi
17	Rho
18	Sigma
19	Tau
20	Upsilon
21	Phi
22	Chi
23	Psi
24	Omega



BIG JOE

CATALOG OF OFF-WORLD COLONIES

World	Location	Star Name	Star Type
Abyss	NEZ 0704	EZ Aquarii	Trinary; all M5V
Alabama Station	EZ6 0405	G29-38	White Dwarf
Americo	NEW 0702	Delta Triangulum	Close Binary G0V + G9V
Arajona	EZ9 0609	94 Ceti	Binary F8V + M3V
Armstrong	NEZ 0410	Procyon	F5V
Atacama	EZ6 0205	HN Pegasi	Binary G0V + Brown Dwarf
Attica	NEZ 0510	Luyten's Star	M3V
Aurora	NEZ 0707	UV Ceti	Binary M5V + M6V
Blue Steel	NEW 0310	Beta Eridani	A3III
Borian	FOM 0410	HR 753	Trinary K3V, M3V + M7V
Boston Habor	FOM 0507	Zeta Tucanae	F9V
Carpathia	CAP 0607	111 Tauri	Binary F8V + M3V
Cartagena	EZ6 0606	Alpha Phoenix	KOIII
Cinnabar	EZ9 0105	Tau Eridani	F7V
Columbia	NEZ 0804	Epsilon Indi	Trinary K5V + two Brown Dwarfs
Commercial	CAP 0303	QY Aurigae	Binary M5V + M5V
Congress	NEW 0402	Kappa Ceti	G5V
Covenant	FOM 0407	Mu Cassiopeia	Binary G5VI + M5V
Crown	NEZ 0509	Wolf 359	M6V
Cyclops	NEZ 0312	DX Cancri	M6V
Defiance	NEZ 0709	Teegarden's Star	M7V
Earth	NEZ 0406	The Sun	G2V
Edo	NEZ 0402	Struve 2398	Binary; both M3V
Exile	NEZ 0601	Altair	A7V
Fomalhaut	FOM 0402	Fomalhaut	Trinary A3V, K5V + M4V
Forlorn	NEZ 0302	Gliese 674	M3V
Galena	FOM 0406	Beta Hydri	G2IV
Goldstone	NEZ 0702	Sigma Draconis	G9V
Hamilton	NEZ 0805	Ross 248	M6V
Hiroshima	NEZ 0304	Ross 154	M3V
Inferno	NEZ 0806	Groombridge 34	Close Binary M1V + M4V

World	Location	Star Name	Star Type
Iron King	FOM 0304	Gliese 892	K3V
Isolation	FOM 0207	Eta Cassiopae	Binary G0V + K7V Eccentric
Ixion	NEZ 0206	Alpha Centauri	Binary G2V + K1V
Jade Palace	NEZ 0603	61 Cygni System	Close Binary K5V + K7V
Kibo	NEZ 0301	36 Ophiucus	Binary K2V stars
La Paz	FOM 0608	HR 511	K0V
Leavenworth	FOM 0102	Ross 775	M3V
Leviticus	CAP 0407	Alpha Mensae	Binary G7V + M3V
Limbo	EZ6 0104	Iota Piscinum	F7V
LQ105	NEZ 0105	Wise 0855-0714	Brown Dwarf
LR203	FOM 0203	EV Lacertae	M3V
LR210	FOM 0210	82 Eridani	G8V
LR408	FOM 0408	107 Piscinum	K1V
LR708	FOM 0708	54 Piscinum	Binary KOV + white dwarf
LR804	FOM 0804	51 Pegasi	G5V
LR806	FOM 0806	85 Pegasi	Binary G5V + K7V
LS102	EZ6 0102	Gliese 785	K2V
LS402	EZ6 0402	L935-50	M3V
LS803	EZ6 0803	Alpha Pegasi	AOIV
LS809	EZ6 0809	Gliese 9028	M2V
LV207	NEW 0207	58 Eridani	G1V
LV209	NEW 0209	Epsilon Reticuli	Binary K2IV + white dwarf
LV603	NEW 0603	Zeta Reticuli	Binary G3V + G2V
LW102	CAP 0102	Ross 619	M4V
LW201	CAP 0201	YZ Canis Minoris	M4V
LW203	CAP 0203	Gliese 293	White dwarf
LW302	CAP 0302	Wolf 294	M3V
LW505	CAP 0503	Chi Orionis	Binary G0V + M6V
LW508	CAP 0508	Eta Leporis	F2V
LW610	CAP 0610	Pi Mensae	G0V
LW707	CAP 707	Capella	Close Binary KOIII + G1III
LW806	CAP 0806	Lambda Aurigae	G1V
LX201	EZ9 0201	Nu Phoenix	F9V
LX307	EZ9 0307	Gamma Ceti	Binary A3V + F3V
LX410	EZ9 0410	Theta Eridani	Binary A4IV + A1IV

World	Location	Star Name	Star Type
LR408	FOM 0408	107 Piscinum	K1V
LR708	FOM 0708	54 Piscinum	Binary KOV + white dwarf
LR804	FOM 0804	51 Pegasi	G5V
LR806	FOM 0806	85 Pegasi	Binary G5V + K7V
LS102	EZ6 0102	Gliese 785	K2V
LS402	EZ6 0402	L935-50	M3V
LS803	EZ6 0803	Alpha Pegasi	AOIV
LS809	EZ6 0809	Gliese 9028	M2V
LV207	NEW 0207	58 Eridani	G1V
LV209	NEW 0209	Epsilon Reticuli	Binary K2IV + white dwarf
LV603	NEW 0603	Zeta Reticuli	Binary G3V + G2V
LW102	CAP 0102	Ross 619	M4V
LW201	CAP 0201	YZ Canis Minoris	M4V
LW203	CAP 0203	Gliese 293	White dwarf
LW302	CAP 0302	Wolf 294	M3V
LW505	CAP 0503	Chi Orionis	Binary G0V + M6V
LW508	CAP 0508	Eta Leporis	F2V
LW610	CAP 0610	Pi Mensae	G0V
LW707	CAP 707	Capella	Close Binary KOIII + G1III
LW806	CAP 0806	Lambda Aurigae	G1V
LX201	EZ9 0201	Nu Phoenix	F9V
LX307	EZ9 0307	Gamma Ceti	Binary A3V + F3V
LX410	EZ9 0410	Theta Eridani	Binary A4IV + A1IV
LX504	EZ9 0504	Alpha Hydri	F0IV
LX606	EZ9 0606	Epsilon Ceti	Close Binary F2V + F7
LX805	EZ9 0805	Alpha Eridani	Close Binary B6 + A1IV
LX810	EZ9 0810	HD 20367	G0III
Mammoth	FOM 0305	EQ Pegasi	Binary M3V + M4V
Maricopa	CAP 0604	Gamma Leporis	F6V
Mausoleum	NEW 0503	Iota Persei	F7V
Medusa	FOM 0105	Ross 780	M4V
Megiddo	NEW 602	Theta Persei	Binary F7V + M1V
Mine 17	CAP 0210	Alpha Pictoris	A8V
Mine 44	FOM 0503	Gliese 884	K5V
Moser’s Landing	CAP 0502	Gliese 233	Binary K3V + M4V

World	Location	Star Name	Star Type
Nevermind	NEZ 0107	Luhman 16	Close Binary Brown Dwarfs
New Tokyo	NEZ 0305	Barnard's Star	M4V
Olympus	NEZ 0108	Lalande 21185	M2V
Oppenheimer	NEZ 0409	Sirius	A1V + White Dwarf
Oracle	FOM 0401	Gliese 849	M3V
Orontes	EZ6 0308	Beta Ceti	K0III
Outpost Daza	EZ9 0704	Delta Cassiopeia	A5IV
Outpost Nero	EZ9 0103	Alpha Triangulum	Binary F5III + M3V
Paradise	CAP 0305	Gliese 250	Binary K3V + M3V
Paydirt	NEZ 0701	Herschel 5173	Binary K3V + M4V
Prosperity	NEZ 0303	SCR 1845-6357	M8V
Pioneer	FOM 0509	Rho Eridani	A5V
Requiem	NEZ 0810	Keid	Trinary K1V, M4V + white dwarf
Resurrection	FOM 0505	Gliese 1289	M5V
Rock 17	NEZ 0609	Kapteyn's Star	M1sd (Sub-Dwarf)
St. Lawrence	NEW 0701	Gliese 86	Binary KIV + white dwarf
Serpentine	NEW 0101	Rana	K0IV
Seven Sisters	FOM 0109	Gliese 832	M2V
Solomons, The	NEZ 0808	Epsilon Eridani	K2V
Storro	FOM 0107	Van Maanen's Star	white dwarf
Tau Ceti	NEZ 0807	Tau Ceti	G8V
Telluride	NEW 0610	Mu Ceti	Binary F0V + G3V
Tennessee Station	EZ9 0106	Alpha Fornacis	F8IV
Tohono	CAP 0701	Stein 2051	Binary M4V +white dwarf
Tombstone	CAP 0802	Pi Orionis	F6V
Tora Bora	NEW 0706	10 Tauri	F8V
Upper Hell	CAP 0704	Gliese 183	Binary K3V + M3V
Utah Station	EZ9 0101	Upsilon Andromeda	Binary F8V + M4V
Utopia	CAP 0810	Beta Pictoris	A6V
Vernier	CAP 0208	Beta Aurigae	Binary A1IV + A1IV
Washout	FOM 0309	Gliese 33	K2V
Zircon	CAP 0601	Luyten 1723	M4V

CORE WORLDS - HIGH LIGHTS

The core is the most densely populated and well-developed region of human space. Earth sits at the centre, hungry for resources and surrounding it are burgeoning colonies, with growing populations of their own. Some of these themselves are becoming increasingly demanding of raw materials from the Outer Rim. The core is split between the American sector, Euro sector and Japanese sector.

ABYSS NEZ 0704 C779643 MRA
Locked-Warm/Non-Industrial G
EZ Aquarii
Trinary System, all M5V Red Dwarfs

Planetology: EZ Aquarii is a trinary star system: two tiny and very cool red dwarf stars (EZ Aquarii A and C) are locked into a close orbit with one another, whilst a third, (EZ Aquarii B) orbits the pair at a distance of 0.43 astronomical units (AU). Abyss is medium-sized world that orbits the A-C binary pair at a distance of only 0.054 AU, nicely within the stars' combined habitable zone, but so close that it is tidally locked, with one hemisphere facing the two stars at all times. There is no rotation – yet day and night are created by the rising and setting of the dim, red star EZ Aquarii B, whose orbit lies further out from that of Abyss. A vast ocean covers 95% of the planet's surface and those islands that do exist are actually the mountain-peaks of a vast volcanic mid-ocean ridge which trails across the planet on the dim-side from pole to pole. There are many active volcanoes and geysers on these islands and the rich volcanic soil produced there is utilised by the red-pigmented vegetation which grows on the islands in abundance. Regular eruptions create towering black ash clouds, resulting in terrific red sunsets that are spectacular to watch, but the eruptions are also responsible for a harmful atmospheric taint of sulfur and other trace elements. The atmosphere of Abyss is not breathable without a surface mask.

Development: The nine million inhabitants of Abyss live, crowded in together, on the

Lightning flashes in the atmosphere of the brown dwarf Meiji (Wise 0855-0714) rugged peaks of its mountainous volcanic island. Many engage in crystal extraction industries, as well as the undersea extraction of minerals which have been pouring out of black smokers on the sea bed for millions of years. The cities are powered by geothermal energy and all are single arcology-type buildings - huge domed constructs housing hundreds of thousands of citizens. Recreational spas are popular amongst locals, these are hot water-pools carved out of deep caves, some below the sea surface with windows fitted to look out directly into the ocean. People are given plenty of freedom on Abyss. A seabed industry exists with underwater bases and mining facilities supported by fleets of industrial submarines. Besides large mining corporations operating on Abyss, there are many family-owned (and run) mining businesses, large clans of submarine miners who form a large part of the participatory government. They are a competitive and vociferous lot, all eager to secure better contracts with off-world concerns than their rivals. Food is produced in aquaculture stations on the seabed. Intelligent, trained dolphins, capable of imaginative tool-use and communication with humans, live within the oceans of Abyss. Most work in the mining industry.

ARMSTRONG   NEZ 0410 B486665 USSC
Warm/Agri, Rich, Non-Ind G
Procyon
F5V with a White Dwarf Companion

Planetology: Armstrong is a small world with a low mineral content and a dense, humid atmosphere. The low gravity encourages plant growth. Immense pagoda trees, resembling a complex webwork of branches and roots can reach as high as two thousand metres. Since their roots cannot draw water up those distances, the pagoda trees are topped with huge water-retaining leaves, reservoirs that feed down to their lower levels. Both the dense atmosphere and low gravity allow a number of large floating creatures to thrive, including the amazing sky-rays, the kite-like pond dipper and the opportunistic blimp, a balloon-like plant which tethers itself to the ground, and exploits clearings in the pagoda forest made by sudden lightning-storm forest fires. Pagoda trees are generally purple and blue, lending the Armstrong landscape an eerie hue. Devil hawks, four winged hunters with long, serrated beaks, hunt in packs to bringing down the vulnerable sky-rays when they can.

Development: Humans from the Community of American States have not colonised the pagoda jungles or the lowlands that feel the effects of the incredibly dense and humid atmosphere most fiercely; instead they have settled in the mountains and as the colony expanded they have built architecturally stunning ‘bracket cities’ on the cliff-sides. These cities are magnificent, artificial terraces, steps that resemble the bracket fungus growing from the trunks of old Earth trees. These suspended, cantilevered, tiered and shelved cities occupy the cooler and thinner air of Armstrong. Food is grown on elaborate mountain-side terraces in paddy fields. Mountain lakes provide drinking water and recreation for the city dwellers, but the pond dippers and blimps can prove to be a problem. Life is generally good here. There are opportunities to descend into the pagoda forests, on photo safaris, scientific expeditions, vacations to some of the lowland lakes, waterfalls and to temporary, inflatable vacation cabins. The population of Armstrong is 2,530,000 living in four bracket cities and ruled by a colonial council, headed by the ‘US Governor for the Off-World Colony of Armstrong’. The colony was founded by Leyland-Okuda Corporation with US co-operation, and Leyland-Okuda still retains a great stake in the project, using Armstrong as its main Off-World headquarters. The colonial council is made up of many expert individuals, including many Leyland-Okuda bureaucrats who have the ear of the governor.

ATTICA NEZ 0510 CA63342
Locked-Hot/Non-Industrial G
Luyten’s Star
M3V Red Dwarf

Planetology: Attica is a super-Earth occupying an inner orbit around a red dwarf star. It has a surface gravity of a bearable (just) 1.8G and is a large, dry world with a standard, breathable atmosphere. Attica is tidally locked to its M3V star, like most ‘habitable’ worlds orbiting red dwarfs. Salt seas and salt lakes litter the light side, whilst the dark side is barren and ice-covered.

Development: A small population of 9,500 live at Grimaldi Station, situated on the coast of the Bitter Ocean. The Ochre Desert stretches out toward the twilight terminator. Havermeyer Oil owns drilling rigs on Attica but runs a fairly loose system of government, rigs compete with one another and drillers are free to shift their employment from one to another. Havermeyer relish this in-house competition. Because of this system, drillers and miners enjoy a higher status and have more say than on other colonies. The rigs and mines are dotted across the brightside and there are also a few on the darkside. A routine starport services Grimaldi Station and plays host to Havemeyer’s local corporate headquarters. East of the station runs a range of steep hills and jagged cliffs that provide some protection from the salt-laden dust-storms; the cliffs are also used as emplacements for huge solar-power arrays and satellite uplink towers. Equipment struggles here, salt gets everywhere, blown in with the dust – and it corrodes parts and machinery. Nothing mechanical is ever reliable.

AURORA NEZ 0707 C552552
Locked-Hot/Non-Industrial, Poor
UV Ceti
Binary System of M5V and M6V Red Dwarfs

Planetology: UV Ceti is a binary system of red dwarf stars, one of which undergoes frequent ‘flares’ producing large amounts of radiation. It is the most prominent example of such a star, and so similar flare stars are now classified as ‘UV Ceti-type’ variable stars. During these flare episodes the star also goes through fairly extreme changes of brightness, in the year 1952 for example, its brightness increased by 75 times in only 20 seconds. This flare activity has an impact on the Earth-like planet Aurora, that orbits UV Ceti. The gravity of the companion star, BL Ceti, is thought to play some part in UV Ceti’s flare events. BL Ceti has no planetary system. On Aurora, high-energy cosmic particles are continually interacting with the planet’s magnetosphere to produce spectacular auroras visible across the entire planet, day or night. Due to this intense bombardment, radio communications are impossible on the surface. Ships in orbit are able to use laser communications and are therefore unaffected. Aurora is not tidally-locked due to the interaction of the binary stars.

The planet is tectonically active and has many volcanic regions. It is this internal heat that creates the planet’s powerful magnetosphere (3.5 times more powerful than Earth’s) which protects life on Aurora from the deadly radiation pouring out from the parent star. However, this invisible shield falters. There are frequent reversals of the poles, perhaps as frequently as once per 15 years, with the magnetic north and south poles switching places over a few days. During this dangerous period when the power of the magnetosphere ebbs, life (both human and non-human) must take shelter. Any mega-flares occurring during this critical time will be catastrophic. In the past they have cooked the desert sands - the Obsidian Desert and the Murano Desert are both locations where vast regions are filled with thin layers of glassed-over desert surface, a record of the planet’s many mega-flares. Most animal life on Aurora is adapted to burrowing, and to a life underground – as a result little is known of the local biology, except that it is particularly ‘radio-resistant’ (able to survive moderate and continuous levels of hard radiation).

Development: Parkfield Corporation, a Canadian conglomerate, holds the license for Aurora and sponsored the initial colonization. All colony settlements and nearly all buildings include deep flare shelters, for when the automated detection system sounds the flare alarm. Research here into animal and crop production focusses on long and short-term genetic mutation and how this affects artificial selection and breeding. Parkfield has a strong genetics affiliate that hopes to profit from the dangerous work done on Aurora. Three mega-flares (with associated polar reversals) have already occurred, and one of these seems to have been responsible for the strange disappearance of an entire settlement of human colonists on the edges of the Obsidian Desert. Investigations have so far drawn a blank.

COLUMBIA NEZ 0804 C554645 MRA
Eccentric/Agri, Garden, Non-Ind G
Epsilon Indi
Trinary system; K5V and two Brown Dwarfs

Planetology: Columbia is a garden world that is a paradise in comparison with most of the other Off-World colonies. It is small, yet holds a thin atmosphere and surface water for much of the year. That year lasts only 36 Earth weeks and due to the tilt of the planet, Columbia experiences quite extreme seasonal variations. Each season is only 9 weeks long. Summer sees days of constant sunshine and hot (40° C) temperatures, whilst the winter is a perpetual night, and since temperatures drop to -20° C the landscape becomes a frozen wasteland. Spring and autumn are more temperate, with normal day-night cycles – and both of these seasons are a time to prepare for the oncoming heatwave or cold snap. On Earth the thick atmosphere would act as a blanket and retain much of the heat during the short, nine-week winter, but on Columbia the atmosphere is thin - when Epsilon Indi sinks below the horizon for good at the end of autumn, any heat is quickly dissipated. There are several small, shallow seas on Columbia fed by long rivers that snake through a maze of canyons and gorges cutting deep into the arid steppe.

Development: Colonists from the Community of American States established most of their settlements on Columbia along the shore of the larger of the shallow seas. Waterfall City, however, is located on the banks of the River Shenandoah and serves as both the capital and site of the planet's starport. The Shenandoah is the planet's longest river, famous for a series of spectacular waterfalls that are situated along its course. The men and women on Columbia have come to terms with their 'freeze-fry' lifestyle. Dome-houses are raised on stilts, serving both to cool the dwelling in summer and to mitigate snow drifts. Likewise the dome roofs were designed to reduce snow build-up. Most vehicles in the colony are tracked and serve equally well in hot, dry conditions, as well as in snow and frost. Crops are grown in large domed greenhouses that are powered by hydro-electric generators along the Shenandoah – the electricity is distributed out to other settlements.

CROWN NEZ 0509 D300373
Locked-Hot/Vacuum
Wolf 359
M6V Red Dwarf

Planetology: Wolf 359 is another red dwarf star, but on a cosmic scale it is tiny, being only slightly bigger than Jupiter. Crown is a small, airless planet orbiting close-in to Wolf 359, it is notable for its blackened coloration across much of its surface. The black material seems to be the volcanic dust and ash from a now vanished neighboring planet. This 'Planet X' may have resembled Jupiter's moon Io, covered in constantly erupting volcanoes that spewed ash and dust into orbit that spiraled in to cover Crown as a fine rain of black dust. What happened to Planet X is a scientific mystery. Crown is covered with craters as well as dust-fields, mountains and ancient lava plains.

Development: A small population of scientists, resource scouts and engineers exist on Crown. These are being sponsored by Makita and Haruna, rival corporate groups. Once surveys are complete and development plans submitted to the Community of American States, a decision will be made as to which of the two corporations will receive the contract for colonization. The rivalry is fierce and the prospectors and scientists ruthlessly dedicated to securing the final contract. Commentators suspect there is something on Crown worth fighting over, yet nothing of great significance has yet shown up in either company's monthly reports.

CYCLOPS NEZ 0310 D331512

Locked-Cold/Poor, Non-Industrial
DX Cancri
M6V Red Dwarf

Planetology: This small planet has a very thin, breathable atmosphere (although surface masks are required by colonists and visitors). It is trapped in a tidally locked orbit around the red dwarf DX Cancri; regular 'wobbles' in the planet's orbit are responsible for some tectonic activity, seismic quakes, and also for some volcanism at the centre of the hemisphere facing the parent star. Cyclops is peppered with meteorite impact craters that have been created over a billion years. Signs of volcanism in ages past are also apparent, with some areas flooded with basalt to create rock and dust-covered plains. The world is noted, however, for the single, large impact crater on the hemisphere that perpetually faces the parent star. This vast crater is 1,230 km wide and 12.5 km deep at its maximum, and has at its centre a 1100m peak. Primitive plant-life exists on Cyclops and the only standing water is found in lakes filling fault line canyons and valleys that are found around the terminator.

Development: Heavy metals are present at the centre of 'The Eye' (as the giant crater is called) and these are being extracted by miners from Matsuyama Mining, who hold the current contract. Most of the miners and support staff are American, Canadian, Argentinian, Mexican or Colombian, however. There is ice trapped in many of the deep craters around the terminator, and these reserves are collected and transported to the colony for drinking water. The population is around 250,000 – living in three main mining cities that are located on the floor of The Eye. The miners face various dangers, but they are particularly susceptible to seismic quakes as well as hidden dust pools that are deep enough to swallow whole excavation machines.

DEFIANCE NEZ 0709 B868744

Locked-Warm/Garden, Agri, Rich
Teegarden's Star
M7V Red Dwarf

Planetology: Defiance is a large terrestrial planet that is tidally locked towards Teegarden's Star, an M-class red dwarf. A significant amount of libration ('rocking' to and fro) occurs which provides night and day around the terminator, the area most densely settled by colonists. These days last for 19 hours. The planet is wreathed in a very dense and humid atmosphere that is volatile and storm-laden. Yet the air is breathable which makes Defiance something of a garden world. The surface of the planet is covered by seas, lakes, swamps and mangrove forest. The seas are warm (27 degrees), generating what American exo-meteorologists dub, 'hurricane fuel'. No part of the planet is immune from the super-storms, the dense, humid atmosphere allows their energy to be carried around on to the darkside where they begin to slow. Darkside weather is perpetually hurricane season. Brightside weather is perpetual super-hurricane season! Inland trees on Defiance give the planet its name, they have incredibly deep roots and are thin and pliable, their trunks are capable of being bent over 65 degrees before snapping. Most vegetation is also halophilic ("salt tolerant') due to repeated inundations of sea water during the tremendous storm surges. Mangrove forests in particular, those forests that actually grow in coastal waters, have not just massive networks of interconnected roots to protect themselves from intense wave action, but also a branch structure that interlocks co-operatively with other trees in the forest to create a vast and complex tangle of branches and vines. As storm surges abate, a large amount of the mangrove's root system is exposed. Rainfall is perpetual on Defiance, where-ever you are and whatever time of night or day it is – rainfall. Constant. It may slacken to a drizzle, or darken the sky as a torrential downpour, weather reports simply talk of approaching storms and the amount of predicted rainfall.

Development: Yes, Defiance is a garden world, despite the super-storms and rainfall, and so colonists from the USA settled here to exploit the environment. There are 11 million colonists from the USA and a few of the other CAS nations, mainly established in the terminator region, where the planet's libration creates a day-night cycle. Oil drilling is lucrative, as the fossil history of mangrove swamps is full of petroleum and natural gas. Farming of Kinako™ is also carried out inland. Defiance is a Tharsis Corporation development; a representative council has been established to air grievances, create policy on the planet and to try to circumvent the growing power of the unions.

EARTH NEZ 0406 A877A77 JASDF,DRW, MRA, USSC Temperate/Ind, Garden G
The Sun G2V

Planetology: In general, the geography of the Earth has changed little since the early 21st century, but still, the vicissitudes of environmental damage have made their mark. Of greatest impact are the periods of poor air quality that can drive people indoors, or force them to wear simple filter masks. Particulate matter, the detritus of hundreds of years of intensive industrialization, peaked in 2067, and today affects certain regions at certain times of the year. It is this contaminant that is responsible for Earth's atmospheric classification of 7 ('Standard, Tainted') in its UWP.
Global temperature has increased by 5ºC and although it has stabilised, its effects have been dramatic. There is now little polar sea ice and sea levels around the world have risen by about 1m. Flooding has occurred on many low-lying Pacific islands, coastal plains and cities (including the Caspian Sea coastline, the Mekong Delta, large parts of coastal Bangladesh, Jersey City, Oakland, areas of the Pearl River Metroplex, the Netherlands and of course, New Orleans).

Only 90% of species have survived the depredations of mankind and the change in climate. Most prominent of Earth's most wondrous animal species: rhinos, tigers, snow leopards, gorillas, orang-utans, sperm whales and polar bears, exist today only in picture books and archived video libraries. There are far too many species of plants and animals that have been lost in the past two centuries and the people of 2225 feel a bitterness toward those fools of earlier years who let these species slip through their fingers. Weather patterns and the seasons are distinctly different from 20th century norms: weather can be more unpredictable, with flooding, drought, hurricanes and either early or late seasons depending on location. In addition, large areas of farmland in Africa, Russia and China have been swamped by encroaching deserts, the destructive effects of desertification. One hundred and fifty years ago a tide of climate refugees began to sweep across the continents and when the sea level rise stabilized, this refugee crisis abated. Some areas of the Earth are no longer farmable, yet the local populations have adjusted to match the new conditions. There has been a great deal of pain and suffering over the last century.

Development: By 2100, Earth had managed to stabilize its population and reverse the trend in the growth of megacities. Great strides had also been made in sustainable living and recycling. Power was generated by fusion reactors on a large scale, whilst smaller communities relied on reliable renewable technologies. However, the mid-22nd century saw another rise in population during a period

From Orbit to Surface
The Trans-atmospheric pipeline

of economic upheaval. The First Recession, beginning in 2166, struck a serious blow to the global economy, fragmenting China into several smaller nations and allowing a resurgent Japan to dominate Asia-Pacific affairs. The world government (the 'Earth Union') did not survive this crisis - regional groups now fragmented back into their original nation states. During this time too, global corporations found they were able to step in to seize far more influence within business, politics and society than they ever had before. From the First Recession onwards, these corporations would play a major part in human expansion beyond the solar system. More detail concerning the history of Earth throughout the past two centuries can be found in the Orientation chapter of this book.

Resources in 2225 are stretched; water, food, raw materials, living space – all are in great demand, with wealthier corporate employees enjoying a larger share than others. This is no eco-Holocaust, but an environmental catastrophe feels just around the corner. And as it approaches, the masses of Earth live their crowded lives, squeezed into tiny one-room apartments, eating Kinako™ soy-substitutes, linked to the Net and watching the nightly pollution warnings. Deforestation, coastal flooding and rampant desertification have reduced crop yields and timber production, oil reserves have been tapped out as have some of the world's mineral reserves. Ten billion people require an immense amount of power, food and raw materials. But now, a greater amount every year is being shipped in from the Off-World Colonies. There are jobs out there for those who want them, and there are places on colony worlds for those who want to begin again under new skies. There are no paradise planets, however, and so the masses of Earth seem generally content to remain in the sprawling mega-cities of Earth. With the corporations not just dominating, but now forming, the global and interstellar economy, all of the best jobs are within their departments, their subsidiaries and their related corporations. It might not be a job for life, but it is a sweet ticket to medicare, corporate housing, private transport, higher wages and better Net access. What more is there in life?

Transatmospheric Petroleum Pipeline: The stunning Trans-Atmospheric Petroleum Pipeline (TAPP) based at Macapa, Brazil, is a multi-billion dollar orbital tower used to pipe oil from orbit to a surface pumping station for minimal cost. A central docking station (Liberty) sits in geostationary orbit 30,000 km over Earth's equator and a fullerene cable extends down through the atmosphere to touch down at a well-anchored base station (the Oil Pumping Nexus) on the outskirts of Macapa. Beyond the space facility the cable runs on another 6,000 km into space and terminates at a tethered asteroid called 1036 Ganymed.

Huge hyperdrive freighters arrive at Liberty Transfer Station filled with petroleum, liquid gas and minerals. The TPP is designed to make getting those precious cargos to the surface easy by using a combination of pipelines and cargo hopper cars. The oil and gas is distributed between twelve vast Pressurized Petroleum Tanks (PPTs). Liberty contains enormous pumping stations that force petroleum and gas under high pressure down the four pipelines that run down the sides of the cable. Solar power arrays on the sides of the pipeline produce power to drive the pumps. Ores and grains are fed directly into automated hopper cars that descend down the orbital tower on a magnetic rail. At Nexus, in Macapa, they dump their contents into waiting railroad freight wagons and then make the return journey. Liberty is one huge off-Earth terminal, emptying the tankers, managing the oil, shifting cargo and passengers from shuttles and spaceplanes into departure lounges, marshalling space traffic, providing temporary accommodation and warehousing - and screening everything that comes and goes. Gravity is kept at a constant 1G on Liberty; there are three major sections to the huge station: outbound, inbound and operations. The operations complex includes control stations, technical workshops, offices, and of course housing and entertainment for workers.

EDO NEZ 0402 E445312
Struve 2398
Binary System of M3V Red Dwarfs

Planetology: This small world orbits a volatile red dwarf flare star (Struve 2398 B), this makes it a dangerous place. Each year lasts 39 Earth days. Although Edo is tidally locked to its parent star, a day-night cycle is produced on the far-side by the existence of a red dwarf companion orbiting far out at around 42 astronomical units (AU). There is an abundance of vegetation, with a great diversity due to the bouts of stellar radiation.

Development: Haruna Biolabs, a medical and research corporation within the Haruna group, is currently conducting extraction and harvesting of plants and substances for use in products. Teams live on the surface, but retreat to bunkers underground during solar storms. A shielded space station remains in orbit in order to provide assistance and support to the surface teams.

HAMILTON NEZ 0805 B554696 Locked-Cold/Non-Ind, Agricultural, Garden
Ross 248
M6V Red Dwarf

Planetology: Like many planets orbiting red dwarf stars, Hamilton is tidally-locked, with one hemisphere in perpetual sunshine while the other sits in permanent darkness. Hamilton occupies the very outer edge of the Ross 248's habitable zone – it is a glaciated world, a world in decline. Tectonic activity stopped approximately 800 million years ago, and without volcanoes to outgas carbon dioxide, the atmosphere lost its ability to equalize the Greenhouse Effect. There was no warming within the atmosphere, and ice formation led to Hamilton's albedo factor (the amount of light it reflects back into space) increase and accelerating. Vast forests and plains filled with native plant-life, and the exotic alien creatures which fed upon it, were wiped out. Almost. Whilst vast ice sheets dominate the lowlands and the frozen oceans, and glaciers crawl slowly out of the mountain ranges, the centre of the bright-side is notable for a small region of tundra - cold, and ravaged by intermittent blizzards, but not yet frozen. Here, remnants of Hamilton's abundant life eke out a treacherous and chilly existence.

Development: Oil drillers from Earth also exist in this harsh environment. The vast forests, long dead and fossilized beneath the ice sheets, are now a petroleum resource to be drilled, extracted and shipped to Earth. More than a million people, mainly from the USA, Canada and Venezuela, live and work here. A mass linear accelerator, in constant use, catapults tanks filled with crude oil into orbit where orbital tugs rendezvous with them and haul them up to a massive oil-tanking space station in geo-stationary orbit. The empty tanker pods return to Hamilton by gliding back through the atmosphere to be landed remotely at the launch site.

HIROSHIMA NEZ 0304 B774633 JADF
Locked-Cool/Agri, Garden, Non-Ind G
Ross 154
M3V Red Dwarf

Planetology: Hiroshima is a tidally-locked planet orbiting a red dwarf star; its surface topology is generally composed of rolling steppe-lands, as well as rocky bad-lands, deserts and mountains. It is a fairly dry world, with several small oceans. Hiroshima's atmosphere is certainly breathable, but it is tainted in some areas with tiny amounts of chlorine. This chlorine originated in the seas, where some tiny sea creatures evolved chlorine biomolecules in order to dissuade predators from consuming them. In a biological arms race, the predators themselves evolved to consume chlorine in trace amounts. This chlorine entered the atmosphere as a waste product, much like methane on Earth. The air is slightly smoggy, with a greenish-yellow tinge when looking long distances. There is no ozone layer, but the chlorine itself absorbs ultra-violet radiation from the star Ross 154. Chlorine often accumulates in yellow mists within low-lying areas that can kill animals, particularly those that are not adapted to absorbing heavy doses. The chemical attacks eyes, skin, throat and lungs and was used by armies as a poison gas in the First World War. There is a little rain on Hiroshima particularly in the highland. Near the coast, sea fogs bring wet cloud banks on-shore that react with chlorine in the air to create a phosgene-type wet-chemical gas. It is deadly. The seas themselves are an extremely mild hydrochloric acid that erodes and weathers coastal terrain at a frightening rate. A strange side-effect of the trace chlorine content is that flames are inhibited by the chlorine atoms - any fire just smoulders and quickly dies.

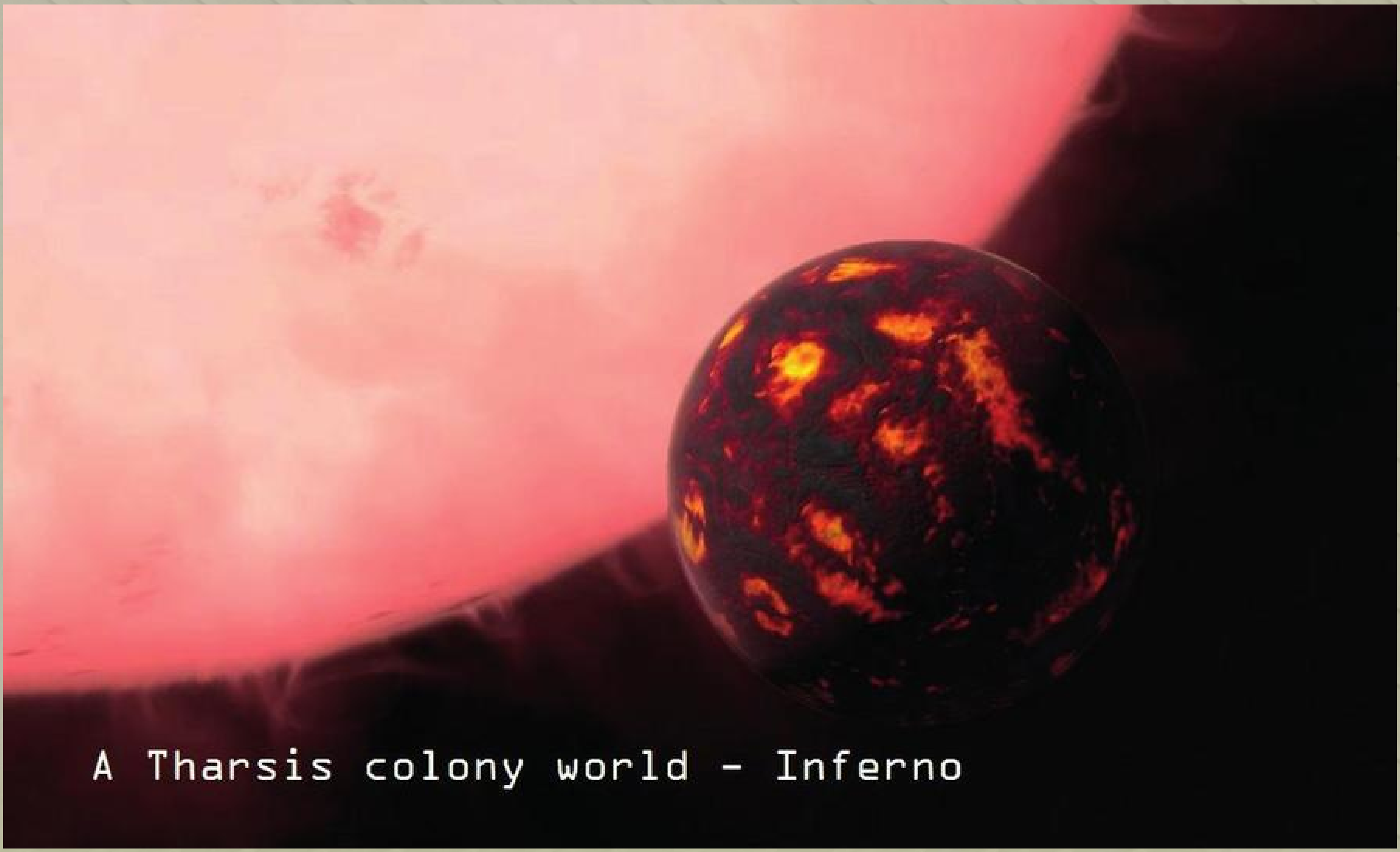
Development: Despite the trace amounts of poison in the atmosphere, 8 million colonists from Japan and other nations in the Asia-Pacific Partnership have settled on the planet. Marble trees, that are a spectacular turquoise-green colour, cover the hills and the coastal mangrove areas - they are adept at dealing with chlorine in the water. Logging industries have been established on Hiroshima to exploit this valuable resource. Vast oil reserves have been discovered in the low-lands too, and an economy has grown up to support the oil drilling platforms. Up in the highlands, where the cities are situated and chlorine concentrates are less, colonists can breathe without surface masks. The farming of Kinako™ is a boom-industry in these upland areas.

INFERNO NEZ 0806 DC106B8
Locked-Inferno/Non-Agricultural G
Groombridge 34
Close Binary System M1V & M4V

Planetology: Inferno is a super-Earth in a very close orbit around Groombridge 34A, which is one of two red dwarfs that make-up the Groombridge 34 binary star system. Inferno has almost one and a-half times the diameter of Earth and its surface gravity is a crippling 2G. Back in the early 21st century, NASA's Ames Research Centre carried out experiments that discovered humans could survive twice Earth's gravity for 24 straight-hours without ill effects. Ames then claimed that it would be theoretically possible for a human to adapt to a gravity environment that is between two and three times that of Earth. When the first CAS colonists arrived on Inferno, those claims were put to the test.

A year on Inferno is fast – lasting only 12 days; and because Inferno orbits so closely (only 0.0034 AU's from Groombridge 32A), it is tidally locked, with one hemisphere permanently facing its parent star. The bright face is a perpetual hell – temperatures exceed 600°C – almost high enough to melt metal. Surprisingly, the terrific temperatures are not due to the proximity of the star (which is 'relatively' cool) but from tremendous volcanic activity which seems to be generated by the tidal forces created by this proximity. Constantly squeezed and crushed, Inferno is literally exploding from within. Lava flows as a liquid continually on the brightside and even across the darkside - there are pools, rivers and seas of the stuff. All of this volcanic outgassing is responsible for Inferno's thin atmosphere composed of hydrogen, helium and hydrogen cyanide.

Development: Who lives on a hell-world like this? Inferno is a world of great wealth and Tharsis Corporation recognised this early on, becoming the primary sponsor of the colonization project. Mining settlements were established along the shadowy terminator between the bright face and the dark face. Vast solar panel farms harnessed the unending



A Tharsis colony world - Inferno

stream of sunlight coming from Groombridge 34A to power the mining industries on Inferno. Precious metals are mined, smelted and processed – much of this goes to Earth, but some is used in Inferno's own industrial economy, manufacturing electronic goods for Tharsis Corporation that can be sold back on Earth or on to colony worlds in the Outer Rim. Helium-3 was thought to be covering the bright face in great quantities, but the continual volcanic upheaval has long ago destroyed those deposits. Colonization and development intensified quickly once the work opportunities and contracts were posted on Earth, tens of thousands flocked to Inferno - and the mining and industrial centres have just continued to grow. Ice is found in polar craters on Inferno's only moon and regular supply runs are required to keep the colony's public water tanks topped up. There are currently 2,800,000 colonists on Inferno, making it one of the most populated Off-World colonies, despite the terrible conditions on the planet's surface.

The Vice President for Inferno Electronics (a division of Tharsis) is in charge on the planet and he rules the colony with a tight grip. Death is ever-present, caused by negligence, laziness, stupidity or just random bad luck. Safety regulations and rules guide the lives of everyone – colonists and visitors alike. Hostile environment suits are needed for visits to the surface, and exposure to the brightside temperatures will defeat any suit in 4-5 hours (after 4 hours, roll 1D6 – on a '1' result, the suit begins to fail and the wearer has 2D6 minutes to get inside a building or ATV. If the result of the 1D6 is 2-6, then continue to re-roll the 1D6 every ten minutes …). Without a habitable environment in which to grow crops, the colonists are dependent on Kinako™ (the Japanese miracle soy food) that is cultivated in vast greenhouses along the terminator.

IXION NEZ 0206 D5C5314
Inferno/Fluid Oceans G
Alpha Centauri Binary System
G2V & K1V with M6V Red Dwarf Companion

Planetology: Ixion is a world orbiting Alpha Centauri A (a star much like our own Sun). The planet is home to a deadly environment and thick yellow-brown clouds that are choking and corrosive. Clouds of acidic hydrogen sulfide make the world a terrifying place to visit - water exists only as steam due to the average surface temperature of 150ºC, its place is taken up instead by liquid sulfuric acid. The planet's surface is divided between the highlands, sliced by acid-carved canyons and the lowlands, where rock is being constantly dissolved and carried off to the liquid sulfur sea. Native life in all its forms is silicone-based, and it draws its energy from the environment around it for electro-chemical reactions. Living creatures on Ixion could be described almost as 'living batteries'. Some of the caves in the highlands are filled with an edible light-producing fungi called klebrig,which taps exotic mineral nutrients from the cave walls.

Development: Alpha Centauri was first postulated as a destination more than a century ago. The first hyperspace mission to the system in 2150 was also the human race's first interstellar manned mission. It was a co-operative endeavour between the USA, the Chinese government and three large corporations: the European company Eurodyne; Voroncovo, the Russian giant; and Tharsis, of America. Although Ixion proved to be a remarkable and truly alien world, none of the backers saw much potential in colonization. None except Eurodyne, which established a scientific presence in partnership with the European Space Agency. Scientists began to study the incredible silicone-based life that they found, and a growing colonial community began to grow. A number of exotic minerals were found on the planet (including tantalum and palladium) that were being naturally exposed by the extreme chemical weathering. The

Seas of sulfuric acid
Welcome to Alpha Centauri

British giant, Erebus was invited in to mine those minerals and export them to Earth under licence.

Meanwhile, the glowing fungus, klebrig, is being processed and exported by some of the human settlers; it forms a key component of light fittings, survival lanterns and any technology requiring bioluminescence. Klebrig is also turned into all manner of foodstuffs. The miners on Ixion are employees of Erebus, while the klebrig processors are free-holders who nominally come under Eurodyne law and government, but who are independent.

JADE PALACE NEZ 0603 B952651
Warm/Poor, Non-Industrial
61 Cygni System
Close Binary System K5V & K7V

Planetology: The world of Jade Palace is large and mostly uninhabitable due to the lack of any appreciable atmosphere on the surface. However, incredibly deep rift valleys criss-cross this surface and a breathable atmosphere can be found pooling at the bottom of these crevasses. They were caused by geological plate tectonics and are, essentially, vast fault line canyons. Jade Palace is still a volcanically active world. Volcanic out-gassing along the equator is responsible for the atmosphere within the gorges. Native bacteria are able to metabolize the sulfur within the volcanic gasses to produce oxygen in breathable amounts. These canyons (some several kilometres deep) form a network which straddles the equator and part of the southern hemisphere. Life, and the ever-growing colony, thrives along the floor of these winding canyons. The largest of the canyon complexes are over 200 km wide and stretch for 3,000 km. In some of the narrow gorges little light penetrates. There are small ice caps and also rivers and small lakes on the floors of some of the more southerly canyons.

Development: Jade Palace was settled by the Chinese government. Since the establishment of the APP, it has come under the control of the Asia Pacific Partnership and has seen an influx of colonists from many other nations. Han is the capital city of the colony, occupying a wide section of canyon far to the south where temperatures are moderate, there are long days of sunlight for much of the year (due to the width of the canyon in that area) and water is plentiful. The population of this city is currently around 300,000; other cities spread through the southerly canyon network add to the population total of 1,060,000. A monorail system connects Han with these centres of population to create a single, unified, off-world colony. Additional water resources are piped in from the southern ice cap, whilst minerals are extracted from large mines located in the dangerous and mountainous uplands separating the canyon systems. Some of the canyons are cut-off from the main network, travel to these 'outliers' is made by jump jet or by travel over the rocky upland wastes that dominate Jade Palace, they are airless, but prone to volcanism, earthquakes and the explosive eruption of poisonous gas clouds.

LQ105 NEZ 0105 X000000 Hot/Asteroid G
Wise 0855-0714
Sub-Brown Dwarf

Planetology: LQ105 is a rock, 200 km across that orbits the dull brown dwarf Wise 0855-0714 (named Meiji). This asteroid has been identified as the most likely site within the star system for any future landing or colonial development. Turbulent clouds within the atmosphere of Meiji rain down molten iron, hot sand and salts -- materials that make up the cloud layers of the brown dwarf.

Development: None. LQ105 is unexplored and unsettled.

NEVERMIND NEZ 0107 D577487
Locked-Cold/Garden, Non-Ind G
Luhman 16
Close Binary System of Brown Dwarfs

Planetology: The world of Nevermind orbits in a binary system of brown dwarfs, planets that are not big enough to become stars, but that are producing vast amounts of energy and heat. The orbital perturbations cause global volcanism for 6 months every four years. The sulfur clouds produced by this volcanism cools the world significantly, a 6 month period called the Long Winter, when the seas freeze and temperatures drop to -50°C. The brown dwarfs produce little light, with the result that darkness reigns on Nevermind. There is algae-type life living on the planet's surface, but the seas teem with much more complex life forms. An eco-system has developed, based around nutrients welling up from deep-sea volcanic vents.

Development: The riches provided by the volcanic history of the planet have attracted miners and explorers from the Western European Union. The colony lives around the power provided by a single fusion reactor. It provides lighting in the permanent darkness of Nevermind. Some of the settlers man fishing boats and bring in food from the oceans. Some is frozen and sold off-world to other colonies. Since the volcanic soils are nutrient rich, powerful arc-lights are set up which trick Terran crops into thinking it is daylight.

NEW TOKYO NEZ 0305 C6586B8
Locked-Temperate/Agri, Non-Ind G
Barnard's Star
M4V Red Dwarf

Planetology: New Tokyo orbits Barnard's Star, a red dwarf star, on the outer limit of its habitable zone. It is tidally locked, like most red dwarf worlds, with one face bathed in sunshine whilst the other faces out into the depths of space in a permanent night. The brightside of New Tokyo is warm and tropical with inhabited areas dominated by wide flood plains and extensive river deltas. Two vast rivers (the Nagaidesu and Hayai) dominate the colonized areas of the brightface, and these great rivers provide fresh water and transportation for the settlers in the area. The mountains are definably grouped into three major ranges: the Shiro range in the north, the Central Highlands further south and the Southern range. One of the most unusual areas of the New Tokyo landscape is the Motsureta - a vast root system covering 36,000 square km of marsh and swamp that is located east of the Hayai delta. This dense wood cave system is like a super mangrove swamp and is used by local terrorists as a base camp and hiding place. Entire base complexes are hidden in there. The fighting conditions are pitch black and nightmarish, like climbing through a combination of living cavern systems and twisting cage bars; everything is damp and alive with albino scavengers.

Development: New Tokyo was colonized by the Japanese government, in co-operation with Haruna Corporation. Today the off-world colony is governed by a dictator who came to power thirty years ago (2195), he had been the Vice President of Haruna in charge of colony affairs and took charge during a series of disasters (a devastating typhoon, followed by a deadly solar flare). Despite attempts by Haruna and the Japanese government to re-establish their authority following the crisis, Stan Yoshimura had the loyalty of the colonists and refused to step-down. Unhappy with losing political control of the colony, the Japanese Diet began to fund a revolutionary movement (the pro-Imperial *Kuro Shotai*) seeking to overthrow Yoshimura in favour of a recognised Japanese government. This guerrilla war divides communities, some want the safe prosperity of Yoshimura, while others long to be part of the Imperial Japanese system. Today, although generally benevolent he and his family are intertwined with the success of the world. New Tokyo has a strong economy that is based on mining, oil drilling, logging and agriculture. Mining is a major activity in the Shiro mountains of the north-east and focusses on the search for the valuable metals of nickel, chromium and iron. There are lucrative oil reserves buried deep below the deltas as well as off-shore. The oil companies (led by the supergiant Erebus Petrochem) who have been given a free reign, command some of the mercenary forces in their regions and are virtual feudal lords amid the delta. Attacks by the *Kuro Shotai*, are met with mercenary patrols and security guards. Safety checks are waived in favour of profitability: pollution is bad - poorly maintained pipes and stations leak oil constantly and this kills the local vegetation and occasionally catches fire, wiping out local colony settlements and ruining crops.

OPPENHEIMER NEZ 0409 A6C0454
Locked-Cold/Desert, Non-Industrial
Sirius
A1V with White Dwarf Companion

Planetology: Sirius is a bright, hot white star with a large white dwarf companion (almost as big in size as the Sun). This white dwarf, known as Sirius B, has no flare activity and is relatively cool which means its habitable zone is close in – almost too close. The mainworld, Oppenheimer, is a dense iron-rich planet, a little smaller than Earth, that is tidally locked to Sirius B. Explorers discovered that this planet was in fact the remnant of a much larger gas giant planet that has survived the death throes of Sirius B when it expanded outwards as a red giant before collapsing to become the white dwarf that exists today. Oppenheimer is classed as a chthonian world, having lost all of its hydrogen and helium through vaporization (hydrodynamic escape). All that is left is the solid iron core that sits at the centre of most gas giant planets. The planet orbits the white dwarf star in only 12 hours, resulting in a high speed orbit. On Oppenheimer the stars move across the night sky dizzyingly fast. This is the blasted ancient ruin of an old planet that now orbits the glowing cinder of a dead sun - an eerie world indeed.

A thin atmosphere composed mainly of hydrogen with elements of methane and ammonia still clings to Oppenheimer – this is a dangerous environment. Hydrogen atoms are so small they can seep through plastic, fabric and even metal through the process of diffusion. And hydrogen – coming into contact with oxygen – is incredible explosive. Vacc suits cannot be made impervious to the potentially flammable effects of the Oppenheimer atmosphere, although starship hulls and colony buildings certainly can. The ammonia constituent will damage the skin, eyes and lungs of anyone unfortunate enough to be exposed to it. Despite this deadly atmosphere –

there is life.

Life on Oppenheimer is mainly composed of simple forms: algae mats, simple mosses and tiny invertebrates that make up part of the eco-system. It seems photosynthesis is unknown here. The incredible magnetic field generated by Sirius B is exploited by the protoplasm of living creatures, since it acts as an electrically conductive material – creating energy. These living dynamos are powered by the fantastic magnetic field that wraps itself around both the white dwarf and its solid iron planet – and most forms of life give off light through bioluminescence to some degree.

Development: American explorers braved the deadly atmosphere and powerful magnetic fields of Oppenheimer to study the unique nature of life here. Extensive reserves of heavy metals, including nickel, copper, gold, silver, cobalt, selenium, tellurium and the six platinum-group metals were soon discovered. Many of these ore bodies lay on the surface – the explosive death of the red giant had already cleared away any upper layers. Huge open cast mines for mineral extraction were soon established by the Tharsis Mining company. Vacc suits will only protect the wearer from hydrogen seepage for around 4-5 hours (after 4 hours, roll 1D6 – on a '1' result, the inside of the suit will catch fire. If the result of the 1D6 is 2-6, then continue to re-roll the 1D6 every ten minutes …). Hostile environment suits have better protections installed, and will last 7-8 hours.

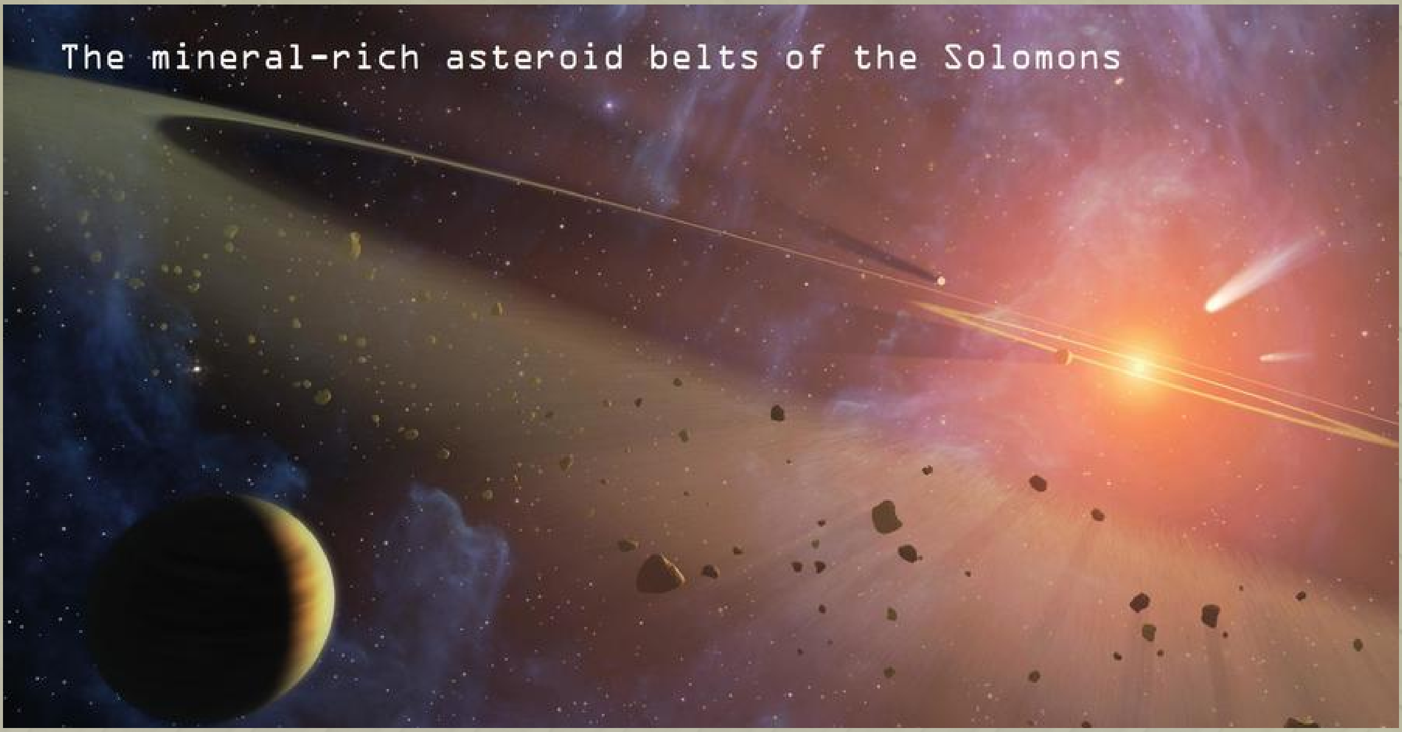
OLYMPUS NEZ 0108 C6A2469 DRW, MRA Hot/Non-Industrial
Lalande 21185
M2V Red Dwarf

Planetology: Olympus is a medium-sized world with an atmosphere of sulfur compounds making survival without oxygen tanks and a survival suit impossible. The world is very volcanic and sulfur outgassing sustains the exotic atmosphere. There are lakes of mild sulfuric acid. Life exists on Olympus: vegetation is dominated by the glowing ferns of red, orange and yellow – however there is no significant animal life. Unusually for a planet orbiting a red dwarf star, Olympus is not tidally locked.

Development: Human life on the planet is associated with the Franco-German colony established there. Around 60,000 people live on the planet and a great deal of activity surrounds the large Deutsche Raumwaffe base at the starport. The only city of Sonnenstadt is powered by geothermal energy - heated greenhouses provide vegetables and meat, and water is collected in hillside traps that capture water vapour from outgassing and from the water ice sheet close to Sonnenstadt and the starport. Highlights of visits here are the glow-ferns at night and guided trips into unexplored lava tubes.

PROSPERITY NEZ 0303 C55A614 Locked-Warm/Non-Ind, Water World G
SCR 1845-6357 M8V
Red Dwarf with Brown Dwarf Companion

Planetology: Prosperity is a large moon that orbits a brown dwarf - a gas giant on the point of turning into a star. It is hot, but generates little light and it is the heat from this brown dwarf that allows life to flourish on the moon. Prosperity is an ocean world dotted with islands and island chains supporting indigenous life. Marine plant and animal life also flourishes within the oceans; yet life here is not easy. For one thing, the moon is tidally locked and a huge, perpetual super-storm rotates endlessly across the near-side hemisphere. This storm is fed by the energy created from the warm, 'hurricane fuel' waters of the near-side ocean. The far-side is much cooler, with ice packs and waterless, but intensely cold, dry deserts. A great danger exists in the form of tides. As the red dwarf star, SCR 1845-6357, sinks below the horizon once every 6 days, great tides are formed that completely cover many large islands. Only a small number of the most



The mineral-rich asteroid belts of the Solomons

mountainous island chains are immune from these tsunami-like super-tides. Two days later, just before the sun rises again, the thunderous tides abate, leaving vast areas of seaweed-clad tidal banks and low-lying islands exposed once more.

Development: The large Japanese corporation Haruna has settled Prosperity. Resource scouts identified that the equatorial islands were created by ancient volcanism that ravaged the moon when it orbited slightly closer to the brown dwarf. Those islands are incredibly fertile and sit on top of great mineral wealth. A population of 3 million lives and works on the islands closest to the longitudes that sit between the nearside and the far-side. Here the waters are not frozen, the super-storm is kept at bay, and all the colonists have to worry about are the super-tides and the tough, amphibious predators that have evolved to survive on this harsh moon.

ROCK 17 NEZ 0609 XD00000
Cold/Vacuum
Kapteyn's Star
M1SD Red Sub-Dwarf

Planetology: Rock 17 is a super-Earth, though without atmosphere, and void of all life. This asteroid has been identified as the most likely site within the star system for any future landing or colonial development.

Development: None. Rock 17 is unexplored and unsettled.

THE SOLOMONS NEZ 0808 A000675 USSC
Frozen/Asteroid, Non-Ind, Non-Agri G
Epsilon Eridani
K2V

Planetology: The Epsilon Eridani system is dominated by a three gas giant planets, three lifeless and uninhabited airless planets and 'The Belts'. These asteroid belts are located at 3 and 20 astronomical units (AU) away from the parent star, respectively. A gas giant named Ægir, which is roughly Jupiter-sized, orbits just beyond the Inner Belt at a distance of 3.5 AU from the star.

Development: Many of the bigger asteroids in the Inner Belt have attracted resource scouts, miners and colonists. These asteroids are known as 'The Solomons' after the mythical mines of Biblical King Solomon; all are densely populated hives of activity – they serve as starports, cities, meeting points, mineral processing centres and entertainment complexes. In order of population and importance, the largest of the Soloman asteroids are Central, Tasker, Incubu, Suliman and Payback. In contravention of Interstellar Commerce Organization rules that state a single world should come under a single governing entity, the Inner Belt is a corporate and political mess. Most of the big corporations have bases in the Epsilon Eridani system, and each of the Solomons is governed by one of those corporate giants. Thus the star system is balkanized and serves almost as a free-trade area, where competitors rub shoulders with one another, deals are struck and both corporate espionage and terrorism are attempted.

TAU CETI NEZ 0807 B444762 USSC
Warm/Agricultural G
Tau Ceti
G8V

Planetology: The Sun-like star Tau Ceti is orbited by three gas giants, several super-Earths, a small Mars-sized planet and a large dust ring. The small, Mars-sized planet (Tau Ceti 4) sits within the habitable zone and has been colonized by humans. Until the ownership of the world can be resolved, it is currently known simply as 'Tau Ceti'. It has a mass of one-eighth Earth and a surface gravity of 0.35 G. The planet is being 'ground down' by weathering. A scarcity of uranium and thorium within the mantle has meant that plate tectonics came to a shuddering halt 80 million years ago - without this process mountain-building has stopped, yet the process of erosion has continued unabated. Mountains have been slowly worn away, surface features obliterated and the terrain flattened. Tau Ceti is a flat and featureless world, albeit cloaked in jungle, scrub, swampland and savannah grasses. Seas worldwide are today all 20-50 metre in depth – the continents having

being ground down and the abyssal plains on the sea-floor blanketed with quartz sand. The seas of Tau Ceti are shallow and filled with bacterial life and seaweeds, making them appear almost green from orbit.

However, it is clear that some pockets of residual geothermal heat still remain, since hot-spots of volcanic activity exist. The volcanoes produced are massive; without the motion of tectonic plates the hot-spots beneath them continue to feed the shield volcanoes in the same locations, millennia after millennia. The twenty or so super-volcanoes on Tau Ceti dwarf Olympus Mons, some are dormant, others active. Carbon dioxide produced by these shield volcanoes is metabolized by the verdant plant growth on the planet, although much remains and causes a contaminant that requires humans to wear surface masks.

Winding through the endless tracts of jungle, swamp and grasslands are ancient, slow-moving rivers winding backwards and forwards in complex loops. Where they eventually meet the sea a huge and elaborate delta of marshes and reed-beds is invariably produced. Local plant-life is large and occasionally carnivorous - American military analysts call it a 'super-jungle'. The wildlife is equally huge (a product of the low gravity) and many of the animals on Tau Ceti are also hostile to humans. Despite this, the climate is extremely conducive to agriculture of all kinds. The constant volcanism is no threat to human life, but the volcanoes are so tall and gravity is so low that ash and dust is ejected far into the upper atmosphere so that every sunset and sunrise is blood-red; the sky retains a red-pinkish tint throughout the day.

Development: The planet had been settled separately by two nations: China and the United States of America. Due to several small-scale political conflicts between Chinese and US forces in space in 2149 and 2160, there were tensions between the two colonies (Shulin and Lindbergh) almost from day one. In 2166 the Chinese space effort was cancelled as the country was wracked by internal troubles and their Tau Ceti colony, Shulin, was abandoned. An international effort was begun to supply the tens of thousands of Chinese colonists with the products and resources they needed for survival in a 'Berlin-style' airlift. By 2180, the newly-established Chinese splinter states were all keen to claim Shulin as their own colony. For thirty years a low-level guerilla war has bubbled throughout the Chinese colony as different armed factions have contested the uncompromising rule of the People's Republic of Guandong (PRG); these factions have been well supplied by agents of the other Chinese splinter states.

With no resolution to the Tau Ceti war in sight, the United Corporate Combine brokered talks in 2212 that would see all Chinese claims to the colony relinquished. It had previously ruled in 2170 that all moons and planets must be ruled by a single government body - there should be no planets shared by the competing colonies of different nations. The aim of the UCC was to unify both the American and Chinese colonies, and in the special case of Tau Ceti, a proposal was made to grant the planet independence from any Earth-bound nation – an unprecedented step. To achieve this, the two colonies first had to be united and the USA was invited to temporarily govern Shulin and preside over first the unification phase, and then the independence phase. For the US this meant one less colony held by China, and the opportunity to establish a powerful pro-American colony in what was now becoming known as the 'American Sector'.

In 2215 the Americans moved into Shulin and within months the insurrection began. Some call it the Second Tau Ceti War, but it really is simply *the* Tau Ceti War, fought for the same reasons, by the same antagonists – only the flag of the government and the military units has changed.

The Chinese Guandong government refusing to give up the highland city of Xishuangbanna, began to fortify and resupply this large urban center through its own starport. Chinese troops now garrison Xishuangbanna and send materiel and arms along the network of jungle trails called the Path of Tears, to Shulin, Maolan and the armed resistance group there known as the Tau Ceti Liberation Army (the TLA, or 'Tauists'). The US with its CAS allies wages a counter-insurgency war in Shulin, Maolan and Zhouzhuang, and a limited bombing campaign against military targets around the heavily defended Xishuangbanna.

Ten years of low level insurgency have followed: guerilla attacks, bombings, executions and brutal retaliations by the TLA have been met with some over-whelming American firepower. The inhospitable nature of Tau Ceti's 'super-jungle' makes the world a tough place to make war, however. Vast amounts of money, materiel, technology, blood, sweat and tears have been poured into the conflict. Analysts at the Pentagon will tell you that some headway is being made, 'that the guerrillas will soon call for a truce, at which point world-building can go ahead, and a shining beacon of off-world independence will light the void.' For inhabitants of Tau Ceti, the war is unrelenting and seemingly ever-ending.

HIGH SCHOOL TO HELLHOLE IN 3 MONTHS

By Carla Corlina | GNN

Updated 1151 GMT June 28 2225

Meet 'Jag' an 18-year old high school student currently working with the Action for Peace Foundation (APF) on Tau Ceti. For over a hundred years this organization has supported reconstruction and aid programs across planet Earth and young Americans volunteered to man these programs. In these early days volunteers got a lot out of the Peace Foundation, it helped build character, it impressed potential employers – it was an adventure! Jag didn't volunteer for the Peace Foundation. He faced expulsion from high school when his gang carried out an arson attack on the campus science block. Recommended for the North Dakota Citizen Commitment Board (CCB) by the principle, Jag found himself being quizzed by state-elected officials, who then decided whether or not he should serve time in the APF, and for how long. Jag was offered a 3 month work contract with the APF on Tau Ceti, or two years in prison. Jag chose Off-World.

"That was no choice at all. Man, those prison units are ruled by the cartels. They say the murder rate's higher than on the streets. That ain't no choice at all. At least here I get to carry a gun. No one messes with me here. It's like a job. You help people out if they let you. If they don't, you stick the gun in their face and tell them to 'get the fuck out'. Sometimes I think I don't wanna go back."

The Community of American States had a big problem recruiting Peace Foundation members from the poorer nations of the organization. Tau Ceti was a trouble spot, dangerous, volatile, and Earth had its own problems. To man the APF projects, the CAS initiated a draft system. CCB's were set up in communities to steer youths out of crime, unemployment and debt and into the Peace Foundation. Here they would develop a sense of identity, a sense of belonging, a purpose and a dose of self-esteem. And, surprisingly, it has worked.

"On our first job we installed a water pump in some backwoods place in Jiangu province. That was OK. The team leaders were volunteers, they didn't have to be there, but they were great guys. Treated us like equals – everyone felt good about that. It was a bit like the army without the rifle and the Armour, but everyone got on well. One guy, Tony, was like, long term unemployed and real over-weight. Those jungles killed him. He sweated more than he could replace with drinking water. Had to feel sorry for Tony. We helped him most of the way. Back in ND I would have rolled the guy. It's different here."

Aid projects run the gamut, from ferrying supplies to building schools, helping to lay fiber-optic cable to digging wells. Often the Action for Peace members (nicknamed 'apes' by their US Army minders) find themselves improving the lives of their Chinese counterparts – unemployed youths heading for trouble with the law. It's these individuals that the TLA recruits and if the Action for Peace Foundation can channel them into useful jobs, jobs that benefit the community, then there's less chance of that person picking up a gun and turning against that community. As soon as the Peace Foundation began its aid projects, however, and began to meddle in local affairs, its members came under fire. Bandits, gangsters and TLA guerrillas see the APF as fair game. The Foundation builds a school in Jiangu, the TLA comes in two months later and blows it up. Soon the TLA were waiting for the APF to turn up to build the new school and then open fire on the volunteers. With little hesitation, but a lot more resolve and determination, the APF armed its members and provided them body Armour – all for personal protection.

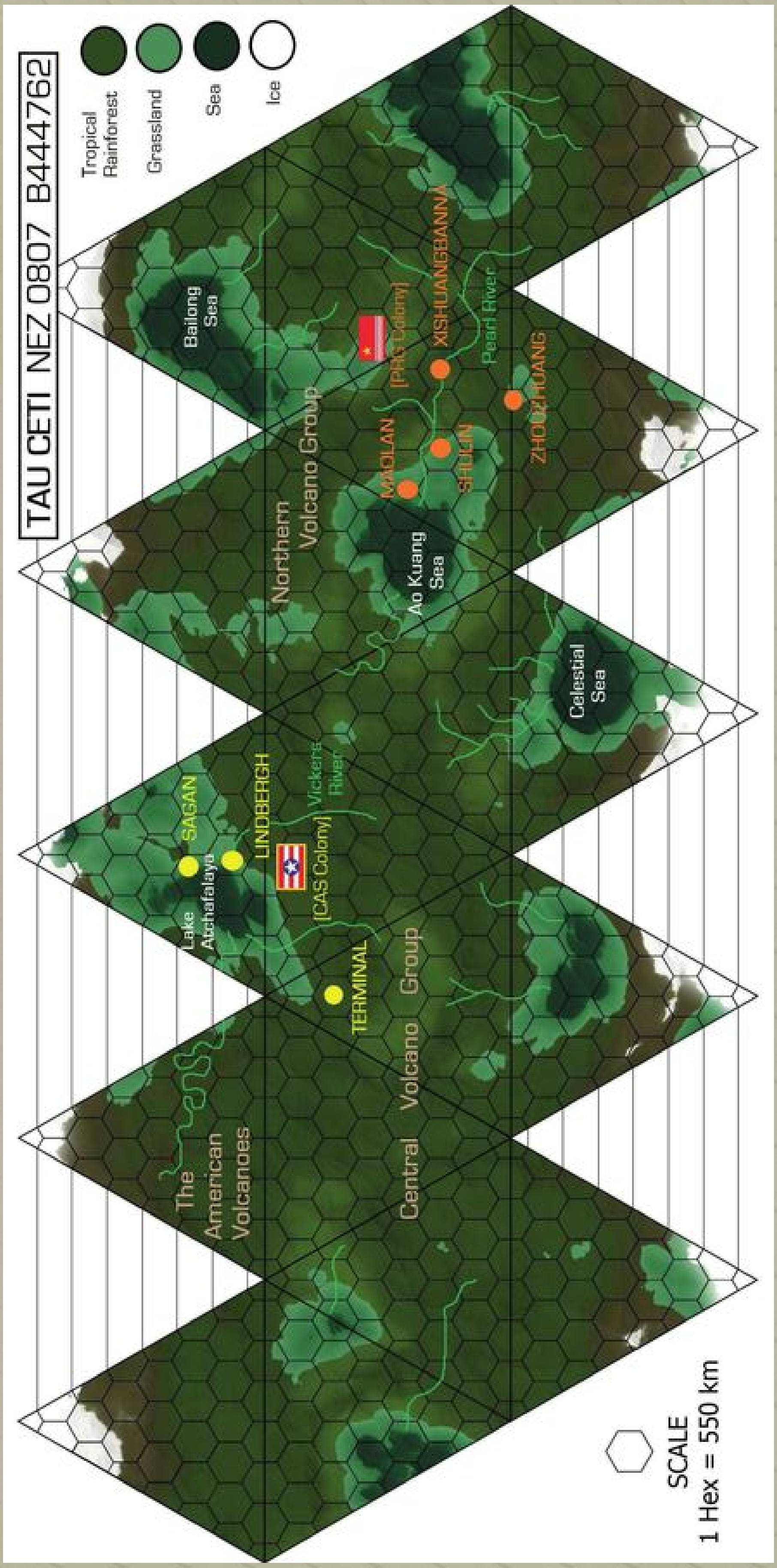
• • •

There's a darker side to the APF, as exposed by the media last March. Although the organization promotes 'hearts and minds' amongst the Chinese population by performing good works, it also performs low-level security in some of the more remote areas. Pipelines, factories, processing plants and so on, suffer attacks by guerrillas which threatens to smash the economy of the colony. The Peace Foundation sees its remit as one of promoting and protecting the Shulin colonial infrastructure and economy. Often, when not actively involved in an aid project, Peace Foundation members are patrolling security fences or conducting patrols through the villages. It's all very much low-level security work, flying the flag, deterring guerrilla action.

"I killed someone for the first time on Tau Ceti. A girl, maybe nineteen years-old. We'd been told that the transports that bussed villagers into the rubber processing plant were going to get whacked by the TLA one morning. So every morning we rode the transports to deter an attack. There were no American security forces within 20 klicks of us, and these villagers were like, our concern - our buddies. One morning our bus stopped in front of a road block and these TLA fighters came rushing out of the bush. I popped off a few caps. Then this girl climbs onto the bus in front with an SA66 and a couple of grenades. I think I closed my eyes when I pulled the trigger. We hit enough to scare them away. Matsuyama sent us a big crate of stuff for that: beer, fresh socks, a few movies, Tampax, chocolate and toothpaste. Great guys!"

Recently however, the Peace Foundation has been accused of supporting the corporate exploitation of Tau Ceti. The conglomerates are powerful backers of the American-led presence on the planet. Many of the villages benefitting most from AFP projects house the workers of corporate plants and facilities. This is a cynical view, but Tau Ceti cultivates cynicism. However, the charges of corporate abuse do not invalidate the good work that the Peace Foundation does. Yet questions regarding the conduct of the conglomerates, of the American forces and the motivations of the UCC remain.

GNN's Suzanne Okara and Brent Jackson contributed to this report.

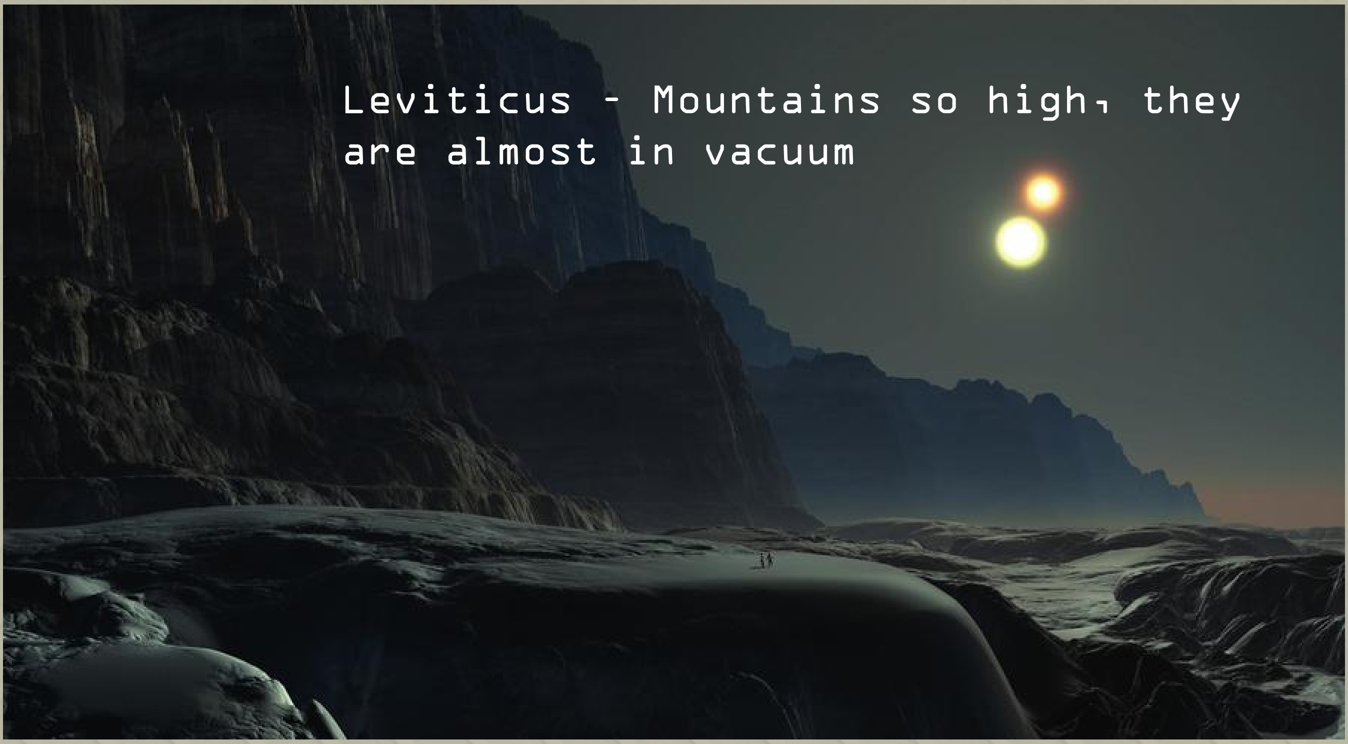

TAU CETI NEZ 0807 B444762
Tropical Rainforest
Grassland
Sea
Ice
Bailong Sea
XISHUANGBANNA
[PRS Colony]
Pearl River
ZHOUZHUANG
MAOLAN
SHILIN
Northern Volcano Group
Ao Kuang Sea
Celestial Sea
SAGAN
LINDBERGH
Vickers River
Lake Atchafalaya
[CAS Colony]
TERMINAL
Central Volcano Group
The American Volcanoes
SCALE
1 Hex = 550 km

OUTER RIM WORLDS - HIGHLIGHTS

Beyond the well-developed Off-World Colonies of the Core, there exists a broader disc of more sparsely populated star systems that extends 6 parsecs from the edge of the Core region. This is a region of exploration and exploitation, where mining outposts, science stations, logging camps and drilling rigs brave the hostile universe to bring riches to Earth. Here and there (La Paz, Paydirt, Medusa, Maricopa and Fomalhaut) colonies have taken root. There are several star system of note:

- The **82 Eridani** system has three super-hot super-Earths, quite close to the star; the mainworld is the furthest of these. The inner system also boasts a hot dust disc, whilst another dust disc also orbits much further out.
- **Kibo** is a minor moon of a gas giant. From this close-in base Matsuyama Corporation launches robotic ram scoops that collect valuable helium-3 for use in fusion powerplants on Earth and in starship reactors. A second moon, Oni, a captured Kuiper Belt object, is home to a large mining installation extracting high value ores such as iridium and palladium.
- The **Fomalhaut** system contains multiple discs of ash, dust and asteroids and has three gas giants, named Typhon, Sauron and Smaug. Fomalhaut was established as a ‘free zone’ by the ICO and the system has become a lawless frontier where corporations compete with allied groups of private prospectors. There are fortunes to be made here – and lives to be lost.
- **EV Lacertae** produces massive flares, it has a fast spin and generates a massive magnetic field. The star turns a faint blue hue each flare.
- **Paydirt** is a rare ‘carbon world’ which has graphite crust with kilometre thick strata of high pressure diamond. During volcanic eruptions diamonds from the interior come to the surface to form mountain ranges of diamond and silicon carbide. The surface landscape features frozen and liquid hydrocarbons (tar and methane) as well as rivers of oils and methane rivers and lakes. Although of roughly Earth-like size, Paydirt has a high density and a surface gravity of 1.5G. Inhabitants are strong and tough, working in diamond extraction and processing for industries.
- **Moser’s Landing** has a cold, freezing methane atmosphere with seas and lakes of liquid methane. The sky is dominated by orange and red clouds, and the terrain is dominated by orange ice slush, snow fields and hydrocarbon dune fields. Liquid methane carves river channels, valleys, canyons and chasms. Colonists refine ethanol and methanol products from the lakes and seas for shipment to Earth.
- Two gas giants orbit within the habitable zone around Ross 780 and several others occupy further orbits. A desert-covered super-Earth occupies a hot, inner orbit. Colonists meanwhile live on **Medusa**, a small jungle moon of a gas giant in the habitable zone. Timbers are exploited here, but the native pollens are toxic to human life, causing insanity and catatonia.

Inside a petroleum refinery on Moser's Landing



Leviticus - Mountains so high, they are almost in vacuum

FRONTIER WORLDS - HIGHLIGHTS

The frontier is a sparsely populated and under-developed region of human space. Starports have been established only to ferry raw materials into space and back to the Core. Human settlements on the frontier are composed of fledgling start-up colonies (Telluride, Utopia, Defiance and Orontes), company mines, drilling rigs, and scientific bases. There are several star system of note:

- The Pi Mensa contains Armageddon, the largest gas giant planet ever discovered; it has a mass equal to ten Jupiters and a highly eccentric orbit taking 5.89 years to circle the star. **LW610** is a moon of Armageddon.
- **Utopia**, a super-Earth orbiting Beta Pictoris, is a carbon world. With an iron core, a mantle of silicon carbide magma, and a crust of graphite and diamond, the planet quickly attracted resource scouts. Utopia enjoys a smoggy carbon monoxide atmosphere and shallow lakes of the yellowish liquid nickel-carbonyl. The star system is young, full of dust belts and comets, with several proto-worlds still forming.
- The super-Earth **Telluride**, orbiting one of the Mu Ceti stars, has a painfully slow rotation, equal to 72 hours (a 36 hour day followed by a 36 hour night). This creates a weather system dominated by ferocious winds as the dayside temperatures soar and warm air rushes towards the nightside. Days are incredibly hot with temperatures reaching up to 50°C in the late afternoon, and nights are equally cold – with temperatures plummeting to -70°C. Life is brutally tough on Telluride.
- The star **Beta Ceti** is prone to prolonged and powerful solar flares.
- G29-38 is a white dwarf star, the burned out remnant of a once bright yellow star. It pulsates, producing variable gravity waves coupled with noticeable changes in brightness. The white dwarf (Christened Cronos) is surrounded by dust rings and comets, and has several small planets in outer orbits. **Alabama** is one of these, orbiting right on the edge of the Cronos habitable zone.
- **Leviticus**, a super-Earth orbiting the Sun-like star, Alpha Mensae, is a frozen world with a tropical sea, dominated by a circular continent – the result of a massive asteroid strike. The atmosphere is dense at sea-level, but thins quickly which means the mountain peaks are in virtual vacuum.
- The planet **Americo**, orbiting Delta Triangulum is a ‘would-be’ Venus, with a runaway Greenhouse Effect. The carbon dioxide component in the atmosphere makes human survival dependant on surface masks. The seas are in retreat, and highly saline, having left behind vast ocean basins, dusted white with salt and dominated by dry salt pans and playas. Salt-packed dust storms are a common problem, and the salt makes life tough for electronics and machinery. The atmosphere is dense and humid – and hot, although without the cooling influence of those long-gone oceans, the nights are frigid.
- **Outpost Daza**, orbiting the blue-white star Delta Cassiopeia, is a brimstone world with a nitrogen atmosphere (combined with some sulfur dioxide). Extensive oceans of liquid sulfur dioxide are made slushy by sulfur ice which sinks to the seabed and turns into a slush mix. There are vast copper deposits on Daza but the inability to burn anything in the atmosphere requires that miners provide pumped-in oxygen to fuel the smelters.

AGENCIES & CORPORATIONS

4

Many of Earth's corporations are extremely powerful, often rivalling in economic power the nations that they feed from. The most powerful are conglomerates. A conglomerate is a corporation that is made up of a number of different, seemingly unrelated businesses. In a conglomerate, one company (often referred to as the general trading company) owns a controlling stake in a number of smaller companies, which all conduct business separately. Each of a conglomerate's subsidiary businesses runs independently of the other business divisions, but the subsidiaries' management reports to the senior managers of the parent company.

Today, many of these conglomerates are family-owned companies where the position of president is inherited by a succession of powerful family members. These individuals ultimately have more control over the company than the shareholders or the members of the board. This single, near all-powerful chairman, acts as manager of the entire enterprise. Each company is vertically organized, with manufacturing, supply, finance, banking and distribution all in-house.

The largest conglomerates diversify any business risk by participating in a number of different markets. For the management team of a conglomerate, having a wide array of companies in different industries can be real boon for their bottom line. Poorly performing companies or industries can be offset by other sectors. By participating in a number of unrelated businesses, the parent corporation is able to reduce costs by using fewer resources and by diversifying its business interests, the risks inherent in operating in a single market are reduced.

The bank and general trading company sit at the heart of the corporation. Typical concerns of a corporation are banking, insurance, steel, trading, manufacturing, electronics, gas and power, chemical production and interstellar development and ship-building. The general trading company (at the heart of the conglomerate) concerns itself with logistics, plant development, and both international and interstellar resource exploration. These corporations trade in many markets (or diversify) for security, and all the component companies own shares in one another's companies, thus preventing hostile take-overs, allowing the monitoring and disciplining of firms and easing pressure on management, allowing the corporation to focus on long-term goals. These 22nd century corporations resemble the South Korean chaebol and the Japanese keiretsu, both formed in the post-war world of the Nineteen Fifties. All the corporations have plenty of power on Earth amongst the political blocs, and everyone in the conglomerates knows that if they fail, they bring the global economies down with them. Many politicians are sponsored by these corporations. They are powerful – for who regulates a transnational super-corporation if not a transnational body that is transparent and responsive to global stakeholders? Such a body does not exist. The UN was disbanded long-ago.

INSIDE THE CONGLOMERATES

On near-future Earth, the corporations are master. Every important or well-paid job here is within such a mega-corporation. A vast percentage of jobs are either in these corporations or one of their subsidiaries or suppliers. Their employees, shareholders and pensioners are at the top of society. Below them are the independent businessmen and other professionals who deal regularly with the corporation and are on good terms with them. To be outside the corporate structure means a wretched life in a Development Zone struggling for a living, with no regular income, no medical or security insurance and no credit.

BUSINESS CULTURE

Loyalty, obedience and duty to a multinational corporation is total, in this way business culture has been influenced greatly by the ethos and internal structure of the Japanese conglomerates (known colloquially as 'zaibatsu'). For most executives their entire life revolves around their prosperity within the business and the prosperity of their employer. Family and children are a mere adjunct to the 'real world' of big business - the salary-man considers his workmates (and thus drinking buddies) more important than his wife. Much of this thinking is a legacy of the old Japanese business system of the 20th and 21st centuries. Central to the idea of corporate loyalty is the emphasis on group responsibility. Individuality is not tolerated. Groups (departments, offices, bureaus, production lines, etc.) work together and achieve targets, not individuals; groups also, together, suffer any penalties. Anyone who attempts to break the mould attracts attention: 'Hey, look at me! I'm better than everyone else!' Helping to build the team bonds are nomikai or 'staff parties' which are put on regularly, not simply once a year. Like karaoke, this Japanese phenomenon caught on as Japanese corporate influence spread through the global business community.

- Wear dark, unassuming suits and conservative ties. Do not attract attention.
- Acknowledge that your zaibatsu is the greatest (or has the most potential).
- Never contradict a superior to their face.
- Exchange business fone cards, which are your mark of rank.
- Conduct business based mainly on trust and long-term relationships, not on quick profits or quality. A conglomerate's established buyers, customers and associates are almost considered to be a part of that corporation's 'network of obligations'.
- Treat your co-workers as buddies. Never go home at night, instead go drinking until late at a bar.

CORPORATE ORGANIZATION

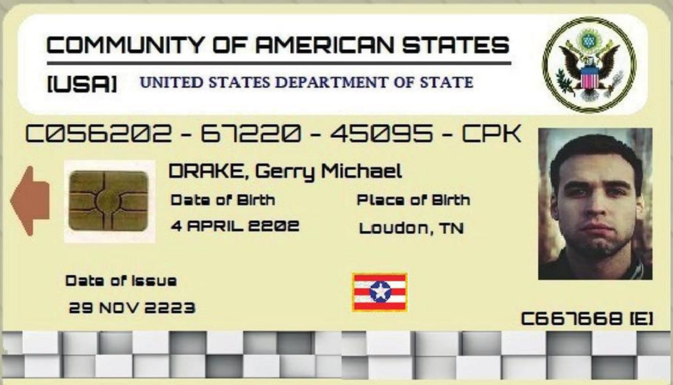
The corporations are organized along similar lines and it may be useful for the referee to understand something of this organization. Directors are vice presidents who have earned their right to sit on the Board through hard-work, diligence, loyalty and economic success. This board of directors forms the nerve centre of operations behind the company. The directors are able to vote one of their number as a president, one as a treasurer, one as a secretary, one as a chief communications officer, one as a chief administrative officer, one as a chief financial officer and one as a chief operations officer. There may be duplicates of the operations office depending on how big the corporation is. The directors all own shares.

In most cases, the big seven conglomerates are led by a single individual who has inherited the office of chairman of the general trading corporation. He and his family own a huge number of shares within all of the related companies in the group and have a vested interest in the security, viability and productivity of all of them. People like Joseph Wu (of Wu-Ketai), Earl Mastrantonio (of Erebus) and Compton de Vaille (of Tharsis) are famous names, figuring on the nightly news as much as any of the top ten world leaders. These people are more reclusive, however, and they are less accountable to the public and to any shareholders. Their lives are shrouded in secrecy and filled with luxuries and privilege that few inhabitants of Earth's Development Zones, Free Zones and Enterprise Zones can imagine, never mind experience. The corporate rank system in 2225 is listed below. Ranks 1-6 are corporate equivalents of the rank system featured in HOSTILE's character creation section. Ranks A-G, meanwhile, are the powerful executives of a corporation and these posts are only open to characters of Social Standing A or higher through HOSTILE's Corporate Executive career.

Rank	**Title**
0	Clerk, Technician, Salesman etc.
1	Senior Clerk, Technician, Salesman etc.
2	Supervisor or Foreman
3	Assistant Team Leader
4	Team Leader
5	Assistant Manager
6	General Manager (or Site, Facility, Section Manager, etc.)
A	Vice President (of a division, region or department)
B	Senior Vice President
C	Executive Vice President
D	Senior Executive Vice President (a chief officer)
E	Director
F	President
G	Chairman

BRANDING

A corporation adopts a colour or combination of colours with which to identify delivery vehicles, flags, advertising hoardings, signs, ID badges and other property. It also creates a logo with which it can brand its products and services. The name of the corporation is often displayed in a particular typeface which is carried through the company's letterheads, marketing and signage.



COMMUNITY OF AMERICAN STATES
[USA] UNITED STATES DEPARTMENT OF STATE

C056202 - 67220 - 45095 - CPK

DRAKE, Gerry Michael

Date of Birth: 4 APRIL 2202
Place of Birth: Loudon, TN

Date of Issue: 29 NOV 2223

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OFF-WORLD DEVELOPMENT

DELEGATION

With its mines, platforms, facilities, manufacturing plants and depots spread out across the stars, the conglomerates must, by necessity, delegate a great deal of their operations to senior trusted employees. The rank of the employee involved depends of the significance and size of the asset they control. A small office at Tau Ceti starport may be run only by a team leader, for example, but a large titanium mine on some distant moon will warrant the skill and experience of a general manager. Even bigger operations, a shipyard or large colonial development would be controlled by a vice president or senior vice president. With a communications time lag measured in weeks, and with the long times involved in interstellar travel, these executives must make crucial multi-million dollar decisions on their own.

The board of directors, or perhaps a department chief might want to intervene in affairs directly when some unusual situation arises in the off-world colonies, and for this the corporations employ agents. Agents are not auditors or stock-takers, and they aren't bureaucrats either. These resourceful and highly-motivated individuals are trouble-shooters, investigators, problem-solvers, fixers, tough-guys, spies and diplomats. Many have military training, others advanced technical skills. All are given free licence to 'get to the bottom of the problem' using coercion, bribery, threats or violence. It goes without saying that they are given temporary security clearances far beyond their pay grade and the equipment, transportation and weaponry required to get the job done. No VP welcomes a team of agents walking through the facility boarding airlock, but he is forced to extend every courtesy and assist in any investigation (although he will stand firm should the investigation stop production, cost the facility money or endanger lives). The corporate agent features as a career in the character creation section.

BUILDING WORLDS

The United Corporate Combine encourages its member conglomerates to establish and run off-world colonies, but this is a continuation of Earth policy from as far back as the early 22nd century when interstellar travel first became possible. Near Earth orbit had been privatized even before 2040, and the corporate sector was always actively engaged in the development of the Solar System.

Today, all of the big seven conglomerates hold licenses to run one or more off-world colonies. The UCC, through the Extrasolar Colonization Administration (ESCA), issues these licences. Profit provides the incentive: a star system is open for colonization, resource exploitation, development and expansion as the corporation sees fit. These licences will run for thirty years before being reviewed, although development must begin within a set time-frame, or the licence will lapse and not be available to that corporation again once an auction for the contract begins. The ESCA regulates the off-world development, monitors the health and safety of the colonists, checks on the legality of operations within the star system and acts as an arbiter of dispute between the corporation and the colonists who have left their old lives behind on Earth to join the venture.

The decision to establish a profitable colonial development is a lengthy one. Teams of resource scouts are employed by all the conglomerates to explore new or unlicensed star systems in the search for viable resources, be they timber, chemicals, minerals, petroleum, etc. Once a moon or planet has been identified as a potential location for a colony or outpost, follow-up teams will arrive to carry out a more detailed survey. Much of this is done with as little fanfare as possible, no corporation wants to see a rival jump in and apply for a license first. Once a business plan has been created it will be submitted to the ESCA as part of the license application. The plan includes how the company plans to settle on the world, what they intend to build, how the colony will develop and how local environmental conditions will be overcome. Often the license is granted simply for mining or drilling rights, with the corporation simply intending to establish a mining outpost with no plans for further development. These 'Restricted', or 'extraction' licenses can later be converted into 'Unrestricted' licenses at a later date, pending the submission of a complete development plan and cost analysis as normal. The advantage of a restricted license is that a corporation does not have to invest multi—trillions of dollars over decades to gain access to the planet's resources. It can establish a mine or drill site at a much reduced (although still astronomical!) cost and limit its expenditure. The disadvantage to the restricted license, however, is that the Mining Regulatory Agency (which oversees all regulated licenses) will carefully monitor the operation to prevent the outpost from going beyond the terms of the license: perhaps opening new mines, drilling in unlicensed zones and generally playing fast and loose with the restrictive rules that the license expounds. In addition, restricted licenses are of a much shorter tenure - after ten years the license is put in abeyance for six months.

Once an MRA 'Profitability and Efficiency Assessment' is completed, other corporations are free to apply for it, though there are significant costs in taking over a license, since all of the infrastructure already established by the founding corporation must be paid for. A well-run, efficient and profitable mining outpost will rarely suffer the indignity of losing its license to another operator. Those outposts that have lots of potential, but are inefficient, poorly maintained or have high accident rates, will be prime targets for competing corporations that are hungry for profit.

The first series of colony ships will bring engineering, scientific and agricultural personnel to the proposed world in order to begin construction of colony infrastructure and establish a viable food source. Regular supply runs will bring in more colonists, more equipment, more building materials and more supplies with the eventual aim of making the colony as self-sufficient as possible. Air, food, water, heating and power are the five key elements that any corporate colony must provide. The first off-world colonies were run by vice presidents from within the corporate structure but later this policy was stopped by the ESCA, which decreed that representative colonial councils should be set up on every colony world. Since 2196, however, this policy has been amended yet again due to pressure from the UCC. Today there are a variety of ways in which colonies govern themselves, of course the corporation holding the license is in ultimate charge of affairs, but the governing body of the citizenry and workers may be a direct democracy, it may employ representatives who sit on a council, it may hand—off decision making to a council or a committee of experts, or the vice president of the operation may rule directly. Each world is different, depending on the corporation, the environment, society and the local situation. The authority of the founding corporation is not in question, however, and a vice president (although his corporate rank may vary with the size of the colony he oversees) will be stationed at the colony and serve as an ambassador for the corporation.

The VP is a representative of the company's interests and he, along with ESCA and MRA officials, will ensure that the desperately needed resources flow off-world to Earth as needed (and as laid out in the license). This vice president has direct control over the industrial assets used to supply Earth, as well as buildings, facilities and parts of the starport that are designated as corporate property. As for the rest of the colony's infrastructure, the corporation acts as landlord, leasing out buildings, land and facilities both to the colonial government, to local businesses and to individuals.

THE BIG SEVEN

There are seven conglomerates that are bigger, more powerful and more influential than any other economic entity in human space. They are: Leyland-Okuda, Tharsis, Voroncovo, Reiner-Gama, Wu-Ketai, Matsuyama and Erebus. Each is actually a conglomeration of related businesses.

LEYLAND-OKUDA

"Forward Thinking. Innovative, Relentless"

Headquarters: Dubai
Main Regional Offices: Armstrong (Procyon), New York, Singapore, Osaka, San Diego, Cairo, London
Chairman: Simon Leyland

Leyland-Okuda has expanded out into interstellar space to create a dynamic business. At its core is an engineering firm, focusing on large scale colonial projects and similar work for other corporations. Leyland-Okuda can build colonies, drilling rigs, starships, space stations and became famous for its pioneering success with the construction of the submarine outpost under the ice crust of Jupiter's moon, Europa.

Related Businesses

- NDM Banking
- Braniff Interstellar
- Rockford Aerospace
- Leyland-Okuda Steel
- Leyland-Okuda Aerospace
- Advanced Motors
- Buckminster Engineering
- Leyland Energy
- Leyland Chemicals
- IBN Computers

Scenario Seed: Leyland-Okuda corporation is controlled by a top secret artificial intelligence (AI) known (by a select number - some of the board, at least) by the codename Black Light. Created by the conglomerate's computer subsidiary, IBN, Black Light has grown impressively from a master control system to a global operator, now able to carry out surveillance, hacking, data gathering and stock market attacks with some skill. Can Leyland-Okuda control this monster? Or will it prove their downfall? Does the chairman, Simon Leyland, even know of its existence?

EREBUS

"Tomorrow-Together"

Headquarters: London
Main Regional Offices: Paris, New York, Nairobi, Reunion (Mars), Sao Paulo, Moscow, Hong Kong, Montreal
Chairman: Sir Byron Falcon-Scott

The symbol of Erebus Power is a map of Antarctica which hints at the petrochemical history of the corporation. The multinational corporation is British and was involved in oil and gas drilling a century ago. Then known as BP, it merged profitably with both a French and a Chinese petro-corp to become Erebus Power, at a boom time in Southern Ocean drilling. Hard times followed the start of the solar power project on the Moon, but Erebus R&D had seen the danger and had made plans to move into space in order to secure new sources of energy. Near Earth asteroids proved to be the lucrative new industry upon which the 21st century Erebus was to be founded. More recently, lucrative licenses in the Outer Rim have been gained. This new extractive industry has made Erebus a new high-end player in the interstellar economy. Erebus is massive in size and ever hungry for profit.

Related Businesses

- Erebus Finance
- Con Am Starline
- Erebus Power
- Kinako Foods
- Gulfstar
- Noricum Armaments
- Bintang Consumer
- EuroChemicals
- Erebus Power
- Erebus Real Estate
- Aztec Systems
- Maze Labs

Scenario Seed: Erebus has established several top secret experimental mines and drilling platforms out on the frontier where radical drugs therapies or retrogenic enhancements are being tested to both increase productivity and worker survivability. Both are illegal, yet the trials continue, with some amazing results. This is a conspiracy that snakes high up inside Erebus Petrochem.

VORONCOVO

"Challenging the Impossible"

Headquarters: Moscow
Main Regional Offices: Beijing, Tokyo, Shanghai, Seattle, Johannesburg
Chairman: Vladimir Leonov

This Russian corporation is focussed on sophisticated engineering, rocket systems, satellite technology, surveillance and the technology of security. Developed from an amalgam of Russian state industries during the tumultuous times in the early 2030s, Ilyech Voroncovo brought together the brightest scientists and projects from the CIS before the West could buy them first. Voroncovo inherited Korolev Rocket and Space Corporation Energia (RSC Energia), which is its successful rocket subsidiary, and Obyedinyonnaya Aviastroitelnaya Korporatsiya (OAK) the famous Russian aircraft design corporation. Voroncovo is a successful player in starship construction.

Related Businesses

- Savarin Finance
- Aerostar Drives
- Colonial Endeavours
- Voroncovo Electronics
- Transdyne Cybersystems
- Eastern Metals Manufacturing
- Voroncovo Aerospace
- Virax Healthcare
- Applied Security Applications (ASA)
- Automat Kaliningrad

Voroncovo is known as an data broker that rarely uses what it knows for personal gain (the space industry excepted). Partner, ASA, provides bodyguards, escorts, armoured cars, detective services, mercenary units, and corporate arbitration services. It is tough and un-compromising. This company has its own private launch complex at Plesetsk, Russia and its Moscow HQ is constructed over old nuclear bunkers and tunnels.

Scenario Seed: All of Voroncovo's starship mainframes have been modified to spy on all of the crew and passengers, recording the data and uploading it to satellites when next in a star system. This data is encrypted, few know of its existence, and no-one at Voroncovo seems to know exactly what it is being used for. Mainframes can even be set to spy on individuals, collecting samples, intercepting messages and recording video feeds to that end.

WU-KETAI

“Be Human.”

Headquarters: Hong Kong
Main Regional Offices: Cold Mountain (Luna), New York, Miami, Chicago, Houston, Beijing, Xian, Shanghai, Mumbai, London, Sydney.
Chairman: Joseph Wu

Joseph Wu is one of the Earth’s few billionaires and the owner of Wu-Ketai, a huge and profitable corporation that has many related companies. Although Wu retains complete ownership and control of Wu-Ketai, the commercial set-up of companies within it is varied and complex. Each of the companies operating under the Wu-Ketai brand is a separate entity, with Joseph Wu completely owning some and holding minority or majority stakes in others. In some instances, he has simply licensed the brand to a company that has purchased a division from him.

The Wu-Ketai brand is strongest in manufacturing, with companies like Wu-Ketai Industries, Wu-Ketai Power Tech, Wu-Ketai Mining and Wu-Ketai Aerospace creating huge profits. Joseph Wu has spread the corporation into mining, colonial sponsorship, entertainment, food production, publishing and automobiles.

Related Businesses

- Wu-Ketai Trust and Banking
- Nørsk Cargo Line
- Wu-Ketai Industries
- Wu-Ketai Powertech
- Wu-Ketai Mining
- Wu-Ketai Aerospace
- Bauspace Brandings
- McConnell Aerospace
- Stern Weapon Technologies
- Novomo Retail
- Wu-Ketai Steel Mills
- Makita Genetics

Scenario Seed: Makita Genetics, the conglomerate’s successful genetics corporation, has been supplying the United States military with bioweapon prototypes for the past five years. These bioweapons are an attempt by the American superpower to ‘equalize’ the Tau Ceti war and strike at invisible and undetectable enemy infiltrators. The dye-markers, bioluminescent algae and genetically-tailored viruses have so far been ineffectual, but the Pentagon is convinced that victory might just lay with some type of weaponized biology – and not bombs. Should the corporation succeed then the unrestricted corporate development license for Tau Ceti has been promised to Wu-Ketai!

REINER GAMA

“First Among Equals.“

Headquarters: Cold Mountain (Luna)
Main Regional Offices: Tranquillity (Luna), Los Angeles, Kolkata, Denver, Abuja, Kuala Lumpur, Washington, Brisbane, Beijing.
Chairman: Kara Santiago

The mining company that began operations on the Moon, now responsible for engineering, mining, construction and aerospace. Today Reiner-Gama dominates the Solar System and holds all of the major licences to exploit helium-3 from Saturn and Mercury, petroleum products from Titan, and valuable mineral ores from the asteroid belt. By these same agreements, Reiner-Gama cannot now gain licences in the Outer Rim or on the Frontier. The corporation’s rivals were forced to move out to the stars to sidestep R-G’s monopoly. Now Reiner-Gama is trapped in the Solar System, although it produces high-quality products that are bought by the people of Earth and by the other large corporations. Nortinghouse produce the best fusion drives on the market, Zenith supply high-quality lasers and scanning systems to the starship industry, and Lunar Lager is sold everywhere and carried on-board most starships.

Related Businesses

- Bank of Clavius
- Reiner-Gama Engineering
- Nortinghouse
- Transtar Line
- Reiner-Gama Electrical
- Reiner-Gama Metals
- Reiner-Gama Materials
- Titan Petrochemicals
- Luna Corporation
- L-4 Lager
- Zenith Electronique

Scenario Seed: Gases spewed out by Jupiter’s moon Io are ionized by radiation from the Jovian magnetic field and get swept up by it to be pushed ahead of Io by the rapid rotation of the magnetosphere. This creates a ‘plasma torus’ that generates an electrical current along the magnetic field lines creating a ‘pipeline’ of ions moving from Io’s poles to the Jovian magnetic poles. This is the Io flux tube, a channel of high intensity magnetic power generating upward of 2,000 gigawatts. R-G engineers maintain a top secret ‘Array’ in orbit which remains within the flux tube at all times, it is undoubtedly drawing massive amounts of power from the tube (or has the potential to). Yet its exact purpose is unknown. Much of the construction and all of the maintenance on the Array is done via tele-presence controlled drones, few humans visit the site. What is this power being used for? Is the Array the reason why Reiner-Gama forgoes all mining rights to the Solar System at the expense of establishing any Off-World colonies?

THARSIS CORPORATION

"The Great Pioneer"

Headquarters: Houston
Main Regional Offices: Miami, Anchorage, Hosaka, Singapore, Rio de Janeiro, Mexico City, Kuwait City, Reunion (Mars)
Chairman: Compton de Vaille

Tharsis was the product of the nationalization of the American mining conglomerate known as AIMCON that had been established to exploit the mineral reserves of Mars in the 2050s. The Ares International Mining Consortium (or AIMCON) was the only organization with a United Nations lease to mine on the surface of Mars. A great deal of activity was cantered around the extinct volcanic region known as the 'Tharsis bulge', with profits coming from extraction of the precious metals extruded into the crust during the region's up-thrust and formation of its super-volcanoes. When an opposition movement took control of Mars after the Belt War and established its own planetary government, the new government nationalized AIMCON and renamed it the Tharsis Corporation. To everyone's surprise the Martian economy flourished and this was in no small part due to the efficient way in which the new Tharsis Corporation was run. During the interstellar revolution of the 22nd century, Tharsis shifted its centre to Earth and to Texas. Great fortunes were being made during this expansion of the human race to the stars and the corporation entered the space exploration and development field. Dozens of partner companies were established to cover the breadth of economic activities that were needed.

Related Businesses

- Bank of Westman-Tharsis
- Tharsis Corporation
- Red Giant Transport
- Tharsis Heavy Industries
- Pacific Metals
- Tharsis Power Generation
- Tharsis Mining
- Red Dragon Beer Company
- Tharsis Motors
- Inferno Electronics
- Tharsis Defence Systems
- Parkfield Biolabs
- Thales-Akita Steel Mills
- Tharsis Aerospace
- Ares Real Estate Holdings
- CRM Data Systems
- Comlink America

Scenario Seed: Born in 2002, the Tharsis chairman Compton de Vaille is the longest lived human in history. Using bouts of hypersleep, along with retrogenic therapy, anagathic medicines and organ cloning, de Vaille is technically 223 years old. In real ('waking') terms he is 172 years old. He is obsessed with prolonging his life, with finding out the origins of the human race and of proving true the wild theories of that 21st century author Erich von Däniken.

MATSUYAMA

“Advanced and Ever Advancing”

Headquarters: Tokyo
Main Regional Offices: Sapporo, Seoul, Kuala Lumpur, Los Angeles, Chicago, Rio de Janeiro, Johannesburg
Chairman: Alexander Inada

Almost a dinosaur from the 20th century, Matsuyama has managed to adapt to the new off-world environment, whilst many of its turn-of-the-century rivals became extinct. The Japanese corporation builds, prolifically and on a huge scale. Governments and other businesses hire Matsuyama’s expertise when a bridge, tunnel or skyscraper is needed. Where the corporation really led however, was in the way it created an affordable method to colonise other worlds. Rather than simply finance off-world projects, Matsuyama created the tools for the first-time colonist to get started with only a small investment. In a method similar to modern-day franchising, training courses were established and linked to corporate-designed colony modules, vehicles and other hardware. Colonists train together and ship out together, they pay for their own training and sign contracts with Matsuyama. The corporation supports the colony with maintenance runs, supply drops and medical assistance for a defined period, while the colonists are bound by their contract to work in the colony’s interest for a similar period. In the longer term, Matsuyama benefits from long term maintenance and hardware replacement contracts with the colony, even if the pioneers should turn to other carriers for their supply runs. This model is now standard amongst corporate colonial ventures, but Matsuyama pioneered it and retains the greatest lead.

Scenario Seed: The Tau Ceti War has proved profitable for Matsuyama. As big contractors to the US government, Lockhart, Maverick and Matsuyama Heavy (which manufactures aircraft, dropships, munitions and armoured vehicles) simply wants the war to continue. It is good for the bottom line (unofficially). With several large Matsuyama plants based in the USA, dare the Pentagon even stop the war? Are they even trying? Matsuyama may even have gone so far as to sabotage peace talks in 2223 and discredit an anti-war Chinese political candidate – thus tipping an election.

Related Businesses

- Hiroshi Banking and Trusts
- Frontier Starline
- Matsuyama Electric
- Matsuyama Steel
- Matsuyama Heavy Industry
- First Mines
- Lockhart Aerospace
- Haruna Biolabs
- Ellis-Itami Data
- NHK
- Yoshiko
- Maverick Defence

KEY CORPORATIONS

The following corporations are powerful and dynamic, having a bold and aggressive place in the interstellar economy. All are part of a conglomerate, but will still appear in RPG scenarios as patrons, antagonists, allies or obstacles. This list is not exhaustive, but merely representative of the types of corporations trading in 2225.

Ellis-Itami - Ellis-Itami is an information corporation and feared for that. It seems to have an unprecedented data network. E-I owns insurance subsidiaries, a detective agency, stock traders, several small Japanese banking companies and Kodai-Secure the famous courier and security firm. Information is Ellis-Itami's game, and the business leadership has a reputation for hiring the brightest cyberspace cowboys and the best investigators. Trying to be impartial, they sell data to all corporations, all governments: everyone. Much feared is the E-I credit section hired by other firms to collect debts. These 'repo men' are basically hired guns, ronin and street scum.

Haruna Biolabs - This corporation deals in medical services, drugs and genetic treatments. Haruna previously did some bio-weapons designs for the Japanese Self Defence Force but this was stopped when the viral agent Delta-2 contaminated food supplies, water and some areas back in the early 23rd century. Many deaths ensued, but no-one was ever certain who was actually responsible. The government blamed a radical terrorist group called the Imperial Restoration League. Haruna, for its part, suspects Makita Genetics of trying (in vain) to discredit Haruna and win the military contract for itself. In mutual fear, both corporations are at virtual full-scale war. The people of Tokyo and the Asia Pacific Partnership are bracing themselves for further violence. Haruna's network of clinics and hospitals are run by a subsidiary called Life Corp. Haruna has spent almost a century at the forefront of human genetics research, perfecting vat-grown organs tailored for a specific donor, and specializing in genetic treatments. In the last two years, however, Los Angeles-based Haruna has become known for its high-end human cloning program. Immortality has been discovered through the perpetual cloning of one's own body and the transfer of one's own living memories into a new, virile body. It is quite legal to purchase a Clone Insurance Policy of $20,000 per month. It involves visiting one of Haruna's high-end clinics and providing a tissue sample ready for cloning when the customer dies. The customer also provides an initial memory recording which costs an additional $50,000 and which is kept in a Superconducting Memory Unit (SMU). These are bulky machines kept in sub-zero basements that always self-erase whenever they play someone's memories into their clone body. Updates are free.

When a Haruna customer dies, the company picks up his body (or head at the very least) and takes a last recording of the corpse's memories if possible, for implanting into the clone that is being force-grown. Growing a clone to full maturity (around 30 years-old) takes one month and requires a valid death certificate in order to prevent cloning someone still alive – which is a gross criminal act in international law. The new clone is the original person in international law.

A force-grown clone that does not have a memory transferred into it is illegal. The clone has no memories at all, no emotions, and is psychologically unstable. It creates its own emotional reactions that can be very dangerous. In 2209, activists broke into the Munich headquarters of the company and exposed the fact that memory-less clones were being created purely to supply replacement organs for their VIP donors. Several hundred memory-less clones escaped and most of those have not yet been recaptured or terminated. This Munich Uprising is described later in the section (see Lebkuchen). Since that embarrassing fiasco in 2209, Haruna has developed the Superconducting Memory Unit and perfected its legitimate, legal and potentially very profitable clone replacement program. Policy holders are few at the moment, mainly due to cost and the stigma that still surrounds the Munich Uprising.

Kinako – Food is in short supply in 2225. Ten billion people are hungry and little enough land exists to feed them all on the diets that have typically served Mankind. So runs the Kinako advertising – the corporation has revolutionized agriculture with genetically-modified soya to create four distinct, diverse and very different eating experiences. In essence, kinako yellow, kinako green, kinako brown and kinako red can be formed into the likeness of many different types of recognisable foodstuffs. It is on the menu of supermarkets, restaurants and starship canteens throughout human space. Kinako is a giant amongst food retailers and also produces soft drinks, alcohol, consumer goods and household items.

Red Dragon Beer – A decent beer is hard to come by – especially in the Outer Rim. Don't get left out in the Cold. Red Dragon beer – be a part of it. If you're in space, you drink Red Dragon – that's just going to be a fact. You may get a hold of L-4 Lager when the Dragon runs out, but when it's back in stock, you pop the cap and sip that taste of home.

Makita Genetics – A market leader in genetics and the creator of Retrogenics™, the science of retroactively splicing and force-growing animal or engineered DNA into a host. Retrogenics technology is experimental and not licenced for use on humans. The chairman of Makita is the mysterious Taneo Tomita, a virtual recluse in the Tokyo Sky Tower that serves as the corporation's global headquarters. The corporation spends a great deal on its public image and the corp is seen as the first of a new kind of company that could change the world and the destiny of the human race purely through genetics. The company has incorporated several medical companies including Alcor, the 1970s cryogenics firm. Makita made the cryonics breakthrough that now allows full-body freezing (or 'stasis') using the now ubiquitous hypersleep chamber. Makita's rival is Haruna Biolabs.

Nortinghouse – Nortinghouse has been building nuclear reactors since the days of the Cold War, back in the 1950s. It worked with NASA on various nuclear thermal rocket designs in the 1970s, and helped to kick-start the revolution in space transportation almost a hundred years later with its gas core reactor designs. Constantly in competition with smaller, newer firms, Nortinghouse is an adaptable and energetic corporation, re-inventing its self constantly. It not only produces good quality fusion reactors but also solar cells, life support systems, plasma rocket systems, space suits and even something as humble as zero-G power tools. Nortinghouse is the epitome of reliability.

Parkfield Biolabs - Parkfield’s operations include agri-chemicals, genetics, biocides and pesticides. Its HQ is in Toronto and its CEO is James Parkfield Jnr. Parkfield is a large Canadian Agri-Corp specialising in genetic manipulation to produce genetically superior crops and associated crop enhancers. Parkfield owns huge areas of farmable land in Canada, Brazil and Russia. The corporation’s main laboratory (‘Rockwell’) is situated in a mountain-side complex which extends deep into the Rocky Mountains. There is some speculation that the complex is responsible for many of the more accessible synthetic street drugs.

Star Envoy Club - The Star Envoy Club is a Hong Kong-based organization that aims to make interstellar travel as bearable (or as the club says ‘enjoyable’) as possible for its members. It is most often used by corporate executives and other wealthy businessmen who are the only people who can really afford the membership fee. The Star Envoy Club maintains small (and very private) hotels and lounges at all class A and class B starports that are accessible only to members and their guests. Deals with all the major carriers mean that the Club can offer an elite-class travel ticket to every member once every two months. Tickets not used can be cashed in for purchase price. Membership of the Club is a privilege and says much about the character’s wealth and social standing.

Transdyne Cybersystems (TDC) – A dedicated robotic manufacturing corporation, TDC builds all kinds of cybersystems, for every possible task. The software division is exemplary and also jealous. It has been known for TDC to release icebreaker software on shareware bulletins in the hope that some desperate cowboy hacker will use it; these programs are often booby-trapped and allow the target corp to trace the perpetrator straight away. TDC has also made radical developments in Artificial Intelligence and uses AI technology in many robotic and software applications. Fully aware androids are now on the production line and very popular with high-end security firms, space agencies, SWAT teams, seabed exploration companies and rescue services. The life-like qualities of this fourth generation of human robots are staggering, and many people can be easily fooled by the Transdyne products. Just as with the earlier generations of human robots, modern androids are extremely complex, sophisticated and expensive. The tasks they are given are typically extraordinarily difficult, dangerous or exacting.

Biggest cyborg sellers are the multi-tasking technician model the Transdyne Cybersystems 70 (selling for around $800,000, equivalent to the cost of a military armoured vehicle) and the combat model Transdyne Cybersystems 110 (selling for around $2 million, roughly equivalent to the cost of an armoured tank).

Yoshiko - A large retail corporation that owns famous the Robot Cafe restaurant chain, many department stores worldwide and clothing, food and household production factories. Yoshiko is a vast, faceless corporation with a very secretive board of directors. No-one is sure who make up the board and theories run wild. Yoshiko is pervasive and can seem very frightening. Breakfast cereal bars, toothpaste, shoes, bottles, vending machines... Yoshiko is the consumer glue that keeps the 23rd century together and that provides the products that keep society ticking over. The corporation’s symbol of the Japanese rising sun is seen virtually everywhere.

KINAKO

The Future of Food

KINAKO Rendang and Veg

- Tasty
- Meat-Free
- Sustainable
- Healthy
- Versatile
- Delicious
- Energy-Giving
- Protein-Rich

From burgers to carrots, bean sprouts to kale, KINAKO can create the food YOU want to eat. Our KINAKO green, yellow, red and brown varieties can take the shape of all kinds of traditional meats, vegetables and pulses.

10 billion people can't be wrong!

LEADERS IN HIGH_VOLUME, INTENSIVE SOYA CULTIVATION

TRUSTED BY EXPERTS

UNITED STATES MARINES CORPS

Before God, I swear this creed. My rifle and I are the defenders of my country. We are the masters of our enemy. We are the saviors of my life. So be it, until victory is America's and there is no enemy - but peace.

From The Creed of the United States Marine

The United States Marine Corps is America's premier quick reaction force, capable of being deployed at short notice via land, sea, air and space. The USMC put troops on board the first US Space Command (USSC) space stations in the 2020s, Marines travelled to Mars in 2027, and helped build Camp Deerman at Reunion in 2028. For deployments into space, the Marine Corps works closely with the United States Space Command (see below). It is now standard for Marines to receive training in space operations and part of that training is the High Intensity Survival Training (HIST), usually carried out on the Moon or on Mars. Following basic training, a Marine is usually assigned to one of three active Marine ground divisions: the 1st Marine Division (Camp Pendleton, CA.), 2nd Marine Division (Camp Lejeune, NC.) and the 3rd Marine Division (Twentynine Palms Base, CA). Marines in combat are supported by air and spacecraft, and these elements are organized as three Marine aerospace wings: 1st Marine Aerospace Wing, 2nd Marine Aerospace Wing and the 3rd Marine Aerospace Wing. The Corps also maintains three logistical units that supply vehicles, catering, supplies and maintenance. Unsurprisingly, they are named the 1st Marine Logistics Group, the 2nd Marine Logistics Group and the 3rd Logistics Group. This all seems straight forward, however, these divisions and wings and the units that they are divided up into, are rarely committed to battle wholesale.

Instead, three permanent task forces are in existence that take Marine units from those divisions and aerospace wings on a long-term basis, and these Marine Expeditionary Forces (MEF's) stand ready to fight major armed conflicts for the USA and its Community of American State allies. II Marine Expeditionary Force, for example, is currently composed of the 2nd Marine Division, the 2nd Marine Aerospace Wing and the 2nd Marine Logistics Group. II MEF also includes a command group and three smaller composite units called Marine Expeditionary Units (MEU's); the 22th MEU, the 24th MEU and the 26th.

The Marine Expeditionary Unit

When not engaged in major wars (such as on Tau Ceti at the moment), the bulk of Marine work is conducted by these smaller, easily transportable Marine Expeditionary Units. Each one is composed of a reinforced Battalion Landing Team, a reinforced aerospace squadron, a combat logistics battalion and a company-sized headquarters element. All of the units are pulled from the parent Marine Expeditionary Force and in total, the MEU's manpower stands at around 2,200. It is usually commanded by a Marine colonel. Units that make up an active MEU spend a year deployed onboard US Space Command starships, this is followed by three months leave on Earth, followed by six months training. While the MEU has its downtime, another MEU is deployed in its place.

An MEU has everything it needs to fight without short-term resupply or reinforcement: infantry, Armoured vehicles, artillery, recon assets, headquarters and communications, supply, engineering, maintenance, medical support, catering and aerospace support and drop capability. It is an 'army-on-the-move', deployed not at a Marine base, but at a US Space Command base where it can rapidly board assault ships to meet a new threat. Roughly 200 troops are involved with logistics, 600 involved with aerospace and aviation and 300 form a recon and security unit leaving around 1,100 personnel fighting as infantrymen and crewing Armoured vehicles and artillery pieces.

The Marine Corps is the United States' premier intervention force, specializing in amphibious assault, hostage rescue and heliborne assault. Although traditionally closely associated with the US Navy - the US Marine Corps has recently made history by being the first military force to deploy its troops away from Earth - first to the International Space Station (ISS) and then to Mars.

The 24th MEU
The 24th MEU is elements of the 2nd Marine Division and is currently located in the Epsilon Eridani star system, at USSC Base Vigilance. From here it is ready to be deployed out to the Outer Rim when needed. The 24th MEU has operational headquarters at Twentynine Palms Base, in California, which is close to Edwards Space Force Base. The 24th MEU is comprised of around 2,000 Marines, supported by an artillery battery, recon and engineering elements, Armoured personnel carriers and orbit-capable military space-planes called 'drop-ships'. The unit is transported to any required destination (given time) by US Space Command vertical assault carriers (either the Grissom or the Shepard class). These are primarily designed to hold, transport and deploy a space-capable MEU and they are on permanent stand-by to ferry parts of the MEU to anywhere required by order of the US president.

The 24th MEU is commanded by Colonel Oscar Ramirez. His immediate subordinate officers are three Lieutenant Colonels, one commands the MEU's Ground Combat Element (a reinforced battalion of three rifle companies), another commands the MEU's Air Combat Element - the Marine Medium Dropship Squadron 764 (DMM-764), known as "Texas Thunder". The third Lt. Colonel commands the MEU's Combat Support Element (eight platoons, each covering a different specialty, from communications to maintenance, engineering to medical).

Infantry - Above all, the Marine Corps is an infantry force, all other assets are designed to deliver and support the Marine infantryman in battle. All Marines receive regular combat training, they are tough and have long gone by the nickname of 'leathernecks'. The Marine infantry force of the 24th MEU is provided by the 1st Battalion of the 8th Marine Regiment (part of the 2nd Division) (shortened to '1/8 Marines'). The battalion has three rifle companies, a weapons (i.e. support) company and an HQ company. Companies are lettered phonetically (Bravo Company, Alpha Company, etc.).

The rifle company, each commanded by a captain, is the basic fighting unit of the Marine Corps. It is comprised of three rifle platoons (of three squads each) along with a command group and a weapons (support) platoon. Platoons are led by lieutenants. It is the 13-man squads which do the dirty work, each is led by a sergeant and often divided into three teams (each commanded by a corporal). All riflemen are equipped with M24A1 8.85mm advanced combat rifle (firing caseless ammunition), the Hewison M5 Integrated Combat Suit and an M9 Eagle-Eye short-range disposable missile.

The primary transport of the Marines is the Advanced Motors ARCC-50 (Armoured Combat Carrier) The 140 men of the three rifle companies are carried into battle and out on long-range patrol by ten ARCCs. Each ARCC is a well-Armoured hostile environment rover with complete life support systems for one month, advanced imaging systems and electronic defenses, with a cabin able to carry a 13-man squad. The crew of the ARCC is two: driver and gunner/commander. For self-defense the standard personnel carrier version of the ARCC carries a cupola-mounted GAU-122 25mm Gatling gun as well as a dorsal turret mounting two Zenith 52 MW free-electron pulse lasers. Other specialist Marine platoons have their own ARCC variants.

Artillery Battery - The MEU includes a battery of six hostile-environment M180 self-propelled railguns. Additional firepower, light reconnaissance and battlefield protection is provided by turreted Zenith M3 40MW phased plasma guns mounted on two Growler Utility Combat Vehicles.

Heavy Weapons - The weapons company provides fire support and an anti-Armour capability with an MQ-6 Phantom combat drone platoon, a heavy weapons platoon with Zenith M3 40MW phased plasma guns and M65 Gecko Multi-Purpose Missile Launchers (both mounted on eight armed Growler Utility Combat Vehicles) and an anti-Armour platoon equipped with eight Growlers carrying a M-30 Avenger anti-Armour missile launchers.

Combat Engineers - This platoon supports the breaching of obstacles, building of causeways, bunkers and fortifications as well other structures, it also provides engineering and construction services. It is equipped with a bulldozer and a variety of other equipment.

Armoured Recon Platoon - Combined with Growlers from the heavy weapons company, this is a mixed platoon used for armed reconnaissance. The platoon typically includes three Growlers (armed with Zenith M3 40MW plasma guns), two Growlers mounted with M-30 Avenger anti-Armour missile launchers, and three Matsuyama MQ-6 Phantoms (each with their associated control Growler and transport truck).

Dropships - Civilian airlines routinely operate trans atmospheric vehicles or space-planes on Earth that take-off at international airports as jets, then at high-altitudes switch to ram-rockets to propel them into orbit. The Marine Corps have been able to commission a VTOL-capable version for vertical envelopment from orbit, and orbital re-supply. These 'dropships' carry out many of the duties of the helicopter on a terrestrial battlefield. The 24th MEU has sixteen UD-5 Mustang dropships manufactured by Global Dynamics which are all part of the Marine Medium Dropship Squadron 764 (DMM-764), "Texas Thunder". It also boasts fourteen ground-attack variants of the Mustang and two further Mustangs fitted out for the squadron command and control task. Providing heavy lift capabilities are four CS-9 Thunderchief shuttles, also from "Texas Thunder". Each Mustang must fulfil a variety of battlefield roles, most important of which is troop transport - dropping an ARCC and its passengers directly onto a planetary surface. Additional duties include general transport, recon, tactical air support for the ground forces (especially the ARCC and its squad), forward observation, medevac and search and rescue. As an air support platform the dumpy but powerful Mustang boasts a forward firing 25mm Gatling Gun and two rocket pods each carrying twelve 70mm unguided rockets.

Snipers - The headquarters company of the MEU includes the Surveillance and Target Acquisition (STA) Platoon. These guys are snipers, trackers, artillery fire directors and even forward air controllers. The STA may be inserted by dropship into enemy territory, and the platoons have pioneered the dangerous technique of the ACOR jump. This is an Ablative Canopy Orbital Re-entry, where individual Marines climb inside ablative re-entry balls just 2m in diameter and fall through the atmosphere, surviving the heat of re-entry to land safely on a parawing at a pre-determined Landing Zone. There were many fatalities while perfecting the ACOR jump. The snipers work in teams of two, both armed with M1000 30MW Laser Rifles.

Recon Marines - Recon Marines are an elite, toughened and highly trained Marines carrying out dangerous reconnaissance work ahead of any assault. These troops gather intelligence and therefore try to avoid contact with the enemy. They are masters of stealth. Like the snipers of the STA, the Recon Marines have been practicing ACOR jumps with some success. A more common (and safer) method of insertion is via drop-ship or HALO jump (high-altitude low-opening). A number of non-standard weapons are carried by Recon Marines to fit the missions they are given. Additional missions include anti-terrorist work and hostage rescue as well as artillery forward observation and path finding. One platoon of Recon Marines is always attached to the 24th MEU. This platoon has four teams of four men and is commanded by a lieutenant.

Intelligence Teams - The MEU headquarters element includes an S-2 officer (Captain Robert Hauk) heading an intelligence section covering interrogation, image interpretation, counter-intelligence support, cartography and electronic surveillance/ interpretation.

Marine Heavy Weaponry

The vehicular weapons used by the US Marines are detailed in the Vehicle Design Guide, by Moon Toad Publishing. Their equivalencies are listed below:

GAU-122 Gatling Gun – Light Rotary Autocannon
Zenith Pulse Laser – Laser Cannon
Zenith Plasma Gun – Plasma A Gun
M65 Gecko Missile Launcher – Artillery Rocket Pod
M30 Avenger Missile Launcher – Missile Light AT
70mm Unguided Rockets – 70mm Strafing Pod
AKV (Precision Strike) – Artillery Missile Light
SRAM (Anti-Armour) - Missile Light AT
Starship Beam Laser – Laser Cannon
Starship Pulse Laser – Laser Cannon

UNITED STATES SPACE COMMAND

This major military arm of the United States began as an arm of the US Air Force to manage satellites, communications global positioning systems and cyber-attacks. As humans began to colonize the Solar System the US Marine Corps, along with the US Space Command (USSC), re-focused their mission to project force out into space. Two interstellar conflicts helped to create the USSC as it is today, one in 2149 and the other in 2160; both involved a rapidly growing Chinese star force. In 2149, Chinese security forces seized an American cargo ship in the Tau Ceti system, they believed it carried arms and military vehicles into the American colony (they were right) and the incident sparked a rescue effort - a mix between Operation Eagle Claw, to save the US hostages in Iran in 1980, and the Falklands War of 1982. The limited military/security ships were augmented by hastily converted commercial carriers. Both sides realized they needed a bigger force and started building… The second 'war' took place in 2160 over the fledgling American colony of Epsilon Indi/Columbia. On a pretext (of massive US casualties to the freezing temperatures in the first big winter) the Chinese force landed support and medical ships to help. They set up new buildings, extended and improved the colony, and ran a temporary caretaker government. The US was outraged but let the imposition continue for six months, unwilling to risk war between the two 'new' space forces. All that did was allow both sides to mass ships and material in the Epsilon Indi system for a eventual retaking of Columbia. Shortly after that the Chinese nation fell apart. But everyone had seen the need for this new arm of the military....

In 2225 the USSC is a space-borne force equipped with several wings of hyperspace-capable strike vessels as well as system defense craft and support ships. Dwarfing the budgets of the other armed services, the USSC is now the premier fighting arm of the US government. It does not maintain infantry troops of its own (other than base security soldiers) but it does work closely with the US Marine Corps and has been tasked with the transport of a full Marine Expeditionary Force (MEF) to an off-world drop-zone. Over a longer, extended duration, it can ferry an entire Marine Expeditionary Force to some off-world battle zone.

AIR FORCE SPACE COMMAND

The USSC is organized as three Space Forces: First Space Force (LeMay USSC Orbital Station); Second Space Force (Reagan USSC Base, Phobos) and Third Space Force (Tranquility Base USSC, Luna). Each space force is commanded by a General and is divided into up to six groups. All space forces include a support group and maintenance support group, as well as at least two operations groups – these contain the combat squadrons of the space force. Squadrons typically have dedicated missions (strike, battlespace, starlift, space survey, communication and courier, as well as vertical assault) and similar types of spacecraft. Squadrons are usually made up of a few hundred people and eight to 24 starships, and are commanded by a Colonel. Meanwhile, individual starships are commanded by officers of Captain to Colonel rank, depending on the size of the ship. The standard USSC squadron types are:

- **Battlespace Squadron (BSS) –** Equipped with a single battle carrier and several interdictor craft used in concert to totally dominate one or more star systems, over a long period of time.

- **Fast Attack Squadron (FAS) –** Fast moving spacecraft in these squadrons are heavily armed and capable of making lightning raids into enemy-held territory and fighting their way out again.

- **Starlift Squadron (SLS) –** Every squadron requires fuel and supplies, the starlift squadrons are equipped with tankers, logistics craft and salvage rigs to keep ships of the USSC operating.

- **Communications and Courier Squadron (CCS) –** Light transport, courier and VIP transport are the missions of this particular squadron.

- **Patrol and Survey Squadron (PSS) –** The USSC requires up-to-date navigational charts that the patrol craft of this squadron provide. They also conduct military sweeps, fast response and search and rescue.

- **Vertical Assault Squadron (VAS) –** These assault squadrons operate troop transports that can drop an entire reinforced battalion of US Marines commandos onto a world in less than 4 hours.

Typically a task force is based around a single operations group, which should include all of the ships and assets it needs to deal with a variety of threats. Additional assets may be attached to the task force from other operations groups if needed. Several operations groups might be on deployment at any one time. Task force commands will vary with their size, power and intent, but will normally be led either the operations group commander, a Lieutenant General, or by a Brigadier General.

THE STARLINE

All of the big conglomerates resemble one another in their structure and organization - they are allied groups of related corporations. Most include a bank, a commercial corporation, an aerospace business, a mining company, a steel manufacturer and various other industrial firms including producers of chemicals, machine parts and electronics. All of the big corporate groups include an interstellar starline. Starlines operate cargo and passenger carrying starships along a well-established network of transport routes. These starlines are integral to the megacorporate business model, used for both transportation of raw materials and finished goods for all of the businesses within the corporate group.

Major Starlines

The big seven starlines are Braniff Interstellar, Colonial Endeavors, Consolidated American (ConAm), Frontier Line, Nørsk , Red Giant and Transtar. Each transports huge volumes of cargo across hyperspace in multi-million dollar starships. Most also ferry passengers that are kept in stasis within hypersleep chambers. Starlines are operated in a similar fashion to the shipping companies of the early 21st century.

BRANIFF INTERSTELLAR

Braniff Interstellar – A successful and pioneering spaceline, part of the Leyland-Okuda conglomerate, and famous for its brightly coloured starships, each one painted in a single bold colour. Braniff has challenged some of the more established star carriers with a more exotic appeal, shipping out colonists as a pre-formed community, rather than individual slabs of frozen 'meat'. The company is famous for hiring the most personable and friendliest crews around, and the Braniff uniforms change every two or three years, not following global fashion – but setting it. Braniff is high profile, its advertising has reached all parts of the globe and it is a starline that the people trust.

Colonial Endeavors - Colonial Endeavors is a transport corporation that is not particularly large but that is able to move its assets quickly and ingeniously to deal with unorthodox cargoes and unusual situations. It should come as no surprise then, that Colonial is part of the ever-adaptable Voroncovo conglomerate. Colonial grew out of the de-regulation of the space industry at the start of the 21st century, and one of the corporation's founding enterprises was Space-X. Colonial went on to supply Mars transports throughout the following decades, and in the 22nd century constructed the first hyperspace-capable colony ship, once the technology had been declassified. Colonial has been a stable fixture on the interstellar scene, surviving because of its adaptability, ingenuity and willingness to innovate.

ConAm Starline – Consolidated American is part of the Erebus conglomerate, and has been the primary transport carrier to the American Sector for the past fifty years. Times are changing, though, and the famous blue livery and wire-globe logo is now being challenged by the bold full-color starships of Braniff, as well as the blood-coloured ships of Red Giant and the stark black and white of Frontier. But Con Am has some cachet, it offers a premium service and has good business links with the Star Envoy Club. Its elite class travel service is renowned as the best and its crews are some of the most educated and skilled in the business.

Frontier Transport – Part of the Japanese Matsuyama conglomerate, Frontier has a huge fleet of transport vessels that specialises in operating into the Outer Rim. It does run routes through the Core Worlds, but in comparison with Red Giant, Transtar and Braniff, not many. Frontier operates well-equipped bases at many of the starports in the Outer Rim, and there are always personnel from the starline on duty. Frontier, like several Matsuyama corporations, are trialling the use of androids in some key positions. There a some starships and some bases with several androids working together – something other companies have not done, and which Transdyne Cybersystems do not recommend.

Nørsk Cargo Line – Nørsk is part of the Wu-Ketai conglomerate. Like Transtar, Nørsk was there are the start of the containerization of space transport and has kept ahead of the pack ever since. Its profits and its high volumes speak of efficiency and corporate success, but Nørsk has had more than its fair share of mishaps and accidents. Starships have gone missing in hyperspace, crews have vanished leaving starships in orbit (fully fueled and loaded) and there have been collisions in orbit. If there is a pattern here, then the accident investigators of the ICO cannot see one, despite Nørsk 's full co-operation.

Red Giant – The Red Giant starline is probably the biggest in the business and it has captured a larger share of the transport market than any other, by a small margin. Red Giant is part of the powerful Tharsis conglomerate and like its sister corporations, made its way in the world through the mining business. Red Giant made a concerted effort in the early years to cater to the mining market, shipping out rigs, personnel, equipment and supplies and bringing back bulk minerals, petroleum and liquid gas. Today that hold over the mining sector is gone, but Red Giant still enjoys a reputation as a miner's transport company. Many crewmembers have served on mining rigs earlier in their careers, which might explain why miners and mining bosses hold the starline in such high-esteem.

Transtar – Transtar is a starline operated as part of the Reiner-Gama conglomerate, and not just throughout the Solar System but throughout interstellar space and the Outer Rim. While the big starlines concentrate exclusively on multi-kiloton behemoths, Transtar does include a large number of 'smaller' starships in its fleet for charters and leasing. However, Transtar is best known for pioneering the use of intermodal container operations in space travel and for its cargo handling activities at starports. Transtar operate loading and unloading facilities throughout the Core Worlds as well as the Outer Rim. The yellow sunburst is commonly seen on loaders, containers and warehouses at many of these off-world ports.

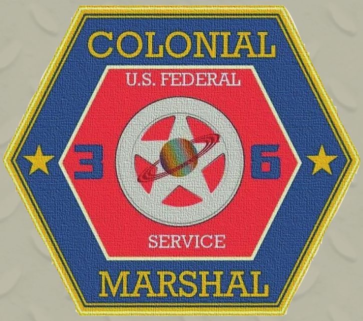
Crew Organization

Officers: Officers hold a commercial space license, they are known as 'licensed' personnel. Officers on-board a commercial vessel are able spacers, technically competent and cross-trained. Below the rank of captain sits a ladder of ranks named first, second, third and fourth officer. Although the captain and first officer are both qualified starship pilots, the other officers do not have specific roles associated with them. The second officer may be the engineer or the medic, for example. The second, third and fourth rank structure establishes seniority, responsibility and experience. These officers take turns in standing watch on the bridge, and sharing that responsibility with the captain.

There are a lot of jobs that need attending to on-board a starship that fall outside the specific job that a spacer has been hired on to do. Cargo needs loading and unloading, orbital craft launched and retrieved, life support systems checked, airlocks cycled, radio messages sent and received and a host of checks on every part of the spacecraft in a never-ending maintenance and replacement cycle. Much of the work and responsibility is shared, most starship crews are small (less than 20 in number) and there's very little 'pulling rank' between first, second, third and fourth officers. Everyone works together, but when the captain and first officer are absent, it's the second officer who calls the shots. When he's unavailable it's the third officer who is in charge. The first officer has some extra duties; he is a qualified pilot, able to take control of the vehicle in the absence of the captain. Additional responsibilities include the welfare of the crew and their training in fire- fighting, explosive decompression and other emergency situations. The first officer will decide who is on watch and assign jobs to crew members in order that the captain's orders may be carried out most effectively. On-board large vessels with several departments and a large number of crewmen, there may well be more than one fourth officer. This often happens on executive transports, large repair and construction ships and on hospital ships, where responsible officers are required to lead departments. Should two fourth officers have no senior officer in charge, then the one serving the most terms has seniority.

Crewmen: Although some crewmen can be quite skilled, holding levels in engineering, sensors, navigation or pilot, for example, they hold no licence, have no command responsibility and are not allowed to stand watches (i.e. be the sole person on the bridge). They are far from being the 2225 AD version of the hull-painting, deck-scrubbing able seaman, however. They are technically proficient and able to work with the officers as part of a tight-knit team. Most will be skilled in space suit operation, zero G activities, drone operations, communications and mechanics. On small starships there may not be many crewman on board and most personnel will be made up of officers (purely so that watch duties can be shared out) but when they are, they are typically assigned to the engineering section, although military vehicles may assign some to the weapons section and executive transports to the customer service (stewards) section. Like officers, crewmen receive a good deal of cross-training.

NON-PROFIT ORGANIZATIONS



Federal Colonial Marshal Service

Throughout the American Sector, law enforcement on outposts and installations without a formal colonial government is usually provided by the Federal Colonial Marshal Service, run from its headquarters in Arlington, Virginia. The FCMS runs alongside the long established Federal Air Marshal Service and the Federal District Marshal Service. District Marshals, Air Marshals and Colonial Marshals are not operating on equal levels of status or on equal pay grades. In fact a Colonial Marshal posting is hardly glamorous, since it often means dealing with stressed, angry or drunken miners or drillers letting off steam. There are more extreme crimes: murders, blackmailings, gang trouble, drug trafficking – but little that would get a diligent marshal mentioned in dispatches. A marshal will be assigned to an installation of 2,000 workers or more, along with a deputy, a sergeant or two and half a dozen officers. Smaller installations that require law enforcement may only be sent a deputy who will only have three or four men or women under him. Many corporations have expressed an interest in using Private Military Contractors (PMCs) for law enforcement duties, but the US government has refused such requests. Having a marshal on large industrial sites comes as part of the agreement the corporation made when it signed the restricted operating license with the US government. Most large outposts are fitted out with a police station, that includes an office, operations and surveillance room, mess, locker, interrogation room and a couple of cells. Bigger sites have commensurately larger facilities. Officers of the FCMS are equipped with flak vests, Stern 2000 shotguns and riot pistols.

Colonial Defence Forces

The colonies do not, as a rule, have their own armies. Since the UCC ruled that each world must come under the jurisdiction of a single government, there would be no-one to fight. And yet some type of local defense force is still called for, particularly in colonies with a history of civil unrest. Many colonies have, over the course of their short history, established a Colonial Defense Force (CDF) - a paramilitary group of local volunteers. A little training is conducted at weekends, with larger wilderness exercises being staged every few months. The troops all know each other well in civilian life, and feel a great attachment to the colony that they defend. Defend from what? The CDFs are called out for natural disaster relief, emergency evacuation, search and rescue, chasing down escaped convicts, surrounding starships that make emergency landings after calling for help, etc. On colony worlds where some element of the population is in rebellion, the CDF is thrown into full-on combat encounters. The forces in the American Sector use US Army ranks and insignia. They are likewise organized into infantry (or mechanized infantry) platoons, companies and brigades. Only the American colony on Tau Ceti has any CDF units as large as a battalion. Weaponry, Armour and vehicles owned by the colonial forces are second rate at best, often it is older equipment that is no longer used by the US Marine Corps or the US Army. This second-line kit is routinely supplemented by civilian gear.

Private Military Contractors

Where the established military forces of Earth fail to extend their reach, government-licensed mercenaries or Private Military Contractors (PMCs) fill the gap. Many are ex-servicemen with clean records who have been vetted, interviewed, retrained and hired by one of these PMC companies. The private security companies pick up lucrative contracts on 'The Circuit', and provide bodyguards for VIPs, and armed protection for corporate interests and expeditions. Large corporations are not allowed to operate their own military forces (as ruled by a UCC directive) and so depend on licensed PMCs to protect their bases, their personnel and their interests. The American government also awards contracts to PMCs to support the over-taxed off-world operations it is involved in, such as the ongoing counter-insurgency war on Tau Ceti. A PMC team has more freedom than a US Marine Corps squad, but is under-resourced and far more 'expendable'. The most prominent PMCs in the American Sector are:

- **Outcome Management –** An established 'blue chip' security group with plenty of revenue, plenty of kit and a stand-up reputation.
- **Syphax Security –** Another group with a good reputation, although a number of incidents involving alleged 'improprieties' on Tau Ceti are currently under investigation by the ESDA and the US State Department.
- **Elderson –** Marcus Elderson and his sons are ex-airborne soldiers that now operate a fast-moving and efficient security unit on a shoe-string budget. They have few vehicles, and certainly no starships, but are top of their game in small-scale commando-style operations.
- **Last Resort –** A 'rough-around-the-edges' group that is fighting to leave behind the mercenary label that it gained a few years ago when a client ran out of money and the team refused to evacuate aid workers it had been sent there to protect. They were all massacred, even though there had been space on the transport. The CEO and colonel-in-chief is Nik Huston.
- **Vigo's Combat Specialists –** Having being dragged through a US Senate Hearing and countless tabloid scandals, Vigo Combat Specialists is still (amazingly) on the Circuit. Yes, and Colonel Tomaz Vigo is still in charge; he runs a tight-ship, an aggressive and well-trained security unit that gets the job done. Vigo is not bad at his job, he's just bad at picking the jobs that won't land his team in jail!

ICO

BRANIFF INTERSTELLAR

NÖRSK

RED GIANT

CONAM

M
McCONNELL

expiscor
MRA

UCC

COLONIAL
U.S. FEDERAL
3 6
SERVICE
MARSHAL

TRANSTAR

24TH MARINE EXPEDITIONARY UNIT
LAND
SEA
AIR
CRISIS RESPONSE FORCE

Union of American Space Labor

FRONTIER

Union of American Space Labor

Union of American Space Labor (UASL)
A composite organization made up of six autonomous labor unions of space-based construction workers, miners, vehicle and equipment operators, commercial starship crews and cargo handling personnel. It was established in 2090 and has its headquarters in New York. Currently, the UASL has around 350,000 members who pay a monthly fee for the benefits that the union provides. Membership includes cut-price access to healthcare, retirement benefits, educational programs and a powerful ally in law, should the member fall foul of corporate procedure or spacing law. The Lupino Center for Commercial Astronautics (LCCA) was established by the union at Spaceport America, in New Mexico, to offer quality training facilities that are highly thought of in the industry. Graduates of the LCCA tend to do well when applying for positions in space industries.

Highly active in the political arena, the UASL's primary objective is to maintain a safe working environment for men and women working in space-based transport and industry, and to ensure fair pay and decent working conditions. The charismatic president of the union is Nicholas 'Bulldog' Lundeburg. Some labor unions in the USA have, historically, suffered from corruption and subversion by elements of the American Mafia. In recent decades the newly emerged Texan Cartel has emulated this strategy. Read the entry titled Texan Cartel, for more information.

Antarctica Traffic Control
Antarctica traffic control is connected to a network of geostationary relay satellites, with coverage extending out across the inner Solar System. The primary responsibility of ATC is the contact, monitoring and control of both outbound and inbound spacecraft within the inner Solar System (inside Jupiter's orbit). It can accept traffic from, and pass it to, the control of a terminal control which provides vectors for approach and docking or re-entry, if required. ATC is responsible for all hyperspace arrivals and departures as well as inter-system flights from one planet or space station to another. Although the tracking systems and communication dishes are sited on the Antarctic continent, the ATC nerve center is based in Perth, Australia.

Saturn Traffic Control
The outer Solar System is not covered by traffic control, although a ship should be able to make contact with ATC, despite the long time lag. Tracking of ships out here is not routinely done. The exception to this is around the planet Saturn, where Saturn Traffic Control (STC) contacts and tracks ships that are approaching or departing Saturnian space. Saturn is used by hundreds of starships every day as a refueling stop, with the ships skimming hydrogen fuel from the outer layers of the planet's atmosphere. Saturn is preferred over Jupiter because of the latter's high gravity and dangerous radiation belts. The large volume of traffic around Saturn requires careful tracking and control. Tracking dishes and uplink towers are sited on the populated moon Titan, and these facilities are linked to a network of satellites in Saturnian orbit. Coverage of controlled space extends out 10 Million km from the gas giant.

The Network
Faster-than-light communication exists, although it certainly is not instantaneous. All starships equipped with hyperdrive have FTL communication capability as do most large outposts and colony worlds. The system requires a space-based hyperwave satellite to relay the signal from one star system to another – it cannot be done from a planetary or moon surface. Typically an uplink tower sends the message up to the

hyperwave satellite which then powers up to send it on its journey through hyperspace. As would be expected, these satellite relays are incredibly expensive and only the larger colony worlds with populations in the millions can afford to maintain more than one of them. Communication on the Network takes 1 parsec per day. The relay system of the Network is operated by the United Corporate Combine and is more formally known as the Integrated Data Network. It is headquartered on the Earth's Moon. The Network operates a small fleet of platform support vessels that it uses to deploy new satellites, repair or decommission old ones and to ferry personnel from site to site. The organization is also tasked with scanning local star systems for communications, and is particularly concerned with distress signals from both civilian and military starships.

Interstellar Commerce Organization

One of the most powerful agencies across human-explored space is the Interstellar Commerce Organization (ICO), a body created by the United Corporate Combine to regulate space commerce, space travel and interstellar trade. It is headquartered in Singapore, on Earth, and has been responsible over the past fifty years for establishing fuel prices, standards of measurement, communication protocols, starport layouts and much more. It serves the interstellar corporate community and its inspectors are constantly on the prowl, investigating accidents and checking licenses. The ICO publishes many of the standard handbooks for spaceflight that all starships are, by law, obliged to carry onboard. There is an ICO office at every A, B and C class starport.

Mining Regulatory Agency

Established by the United Corporate Combine, the MRA serves the interstellar mining, logging, drilling, salvage and extraction industry just as the ICO serves the commercial sector. It co-ordinates prospecting claims, issues restricted licenses, adjudicates in salvage claims and assists in coordinating the activities of dozens of mining corps and independent drilling operations in the Outer Rim and beyond. The MRA runs offices on key planets that enable mining crews to find new employers and vice versa; they are meeting points for personnel, mining, drilling and salvage crews and employers. These bases include cheap accommodations, laboratories, warehouses, cafeterias and repair workshops. The bases are often the starting point for many corporate resource exploration teams. Officially established to serve the interests of the corporations and the miners, the MRA in reality looks out for the profits of the big mining corporations. MRA shuttles can be seen in systems that contain an agency base, but the organization also operates a small number of starships operating throughout the Outer Rim.

ExtraSolar Colonization Administration

The UCC quite rightly established rules for the settlement and development of colonial projects. Prior to the setting up of the UCC, a confusing number of competing national colonies had been created, some even shared the same planet, causing friction and needless rivalry. Through the law-makers at the newly created ESCA, however, strict rules were enforced. Each planet or moon had to have a single governing body if it wished to stake a claim as a colony. The funding of colonies by large corporations and the legal obligations of these companies also came under scrutiny. Where it can, the ESCA assists colonial development with training, sponsorship, technical (and in some cases practical) on-site support. Rather than oppose or restrain the wishes of the sponsoring corporations, the ESCA assists and supports them. Still, it has a responsibility to look out for the interests of colonists and how they are treated. ESCA observers maintain a permanent office on Tau Ceti and on New Tokyo.

APF

"AFFLUENCE, PEACE, FREEDOM"

Action For Peace Foundation

The APF is a humanitarian agency established by the United Corporate Combine on behalf of its member conglomerates. Its stated aim is to provide assistance to local communities that the conglomerates work with. Activities include building hospitals and wells, assisting with harvests or vaccination programmes, installing radio links and water pipes, as well as emergency reconstruction following natural disasters. The corporations call this 'giving something back to the community' and bringing 'global living standards to left-behind communities'. Cynics call it hearts and minds, pacifying Off-world colonies or Third World regions with sops, reducing social friction or backlash as they plunder the area's raw materials and exploit its workers.

Originally the APF recruited young, enthusiastic college kids wedded to the corporate globalist cause. Soon, exploited colonists and Third World communities turned to violence against some of the corporate concerns, a backlash at the exploitation – and the college kids had no stomach for a fight. The APF has begun to rely more on young offenders who are given the chance to join the APF rather than face jail. As such they are still technically 'volunteers'. These APF workers are often out in the wilderness, relying on their own skills and abilities – security details are rarely provided by the host nation or colony. Now teenagers dodging jail time find themselves carrying assault rifles and wearing body armour as they dig out irrigation ditches on places like Leviticus – and when local guerrillas attempt to stop them, these teenage humanitarian workers can end up in bloody firefights. No wonder volunteers are hard to come by!

CRIMINAL ORGANIZATIONS

Snakeheads

With a long history of criminal activity, the Snakeheads crime syndicate had its origins in Fujian province, eastern China. The gang grew out of the racketeering of the Triads and made a name for itself at the end of the twentieth century as a people smuggling ring. This lucrative illegal business capitalized on the plight of the poor in developing countries (in particular China, but in more recent decades elsewhere around the globe) and their desire to move to a developed and prosperous nation.

The Snakeheads work as independent organizations that come under the umbrella of the Dragon King who is a shadowy hereditary figure whom the police struggle to identify, much less arrest. In these off-world times, the Snakeheads have extended their criminal tentacles into orbit and beyond.

There are millions who want to leave Earth and make a fresh start on the Off-World colonies; but moving off-Earth is not as simple as the utopian space pioneers of the 1970s envisaged. If you want a stake in the new future of mankind, you need to be assessed, tested, trained, retrained and retested. Education, talent and ability get you a long way through the training programs - hard work and perseverance take you the rest of the way. The Snakeheads are able to bypass all of this nonsense and get someone into a job or a colony position as long as they have money. Members are able to bribe or intimidate officials, spaceport workers, dock managers and so on ... smuggling individuals, couples or families off Earth and into their dream assignment, perhaps that of a worker on an asteroid mine, planetary colony or space station. Miners can sign up for lucrative contracts, earning many times what they could ever earn in their impoverished developing nations on Earth. The Snakeheads make it happen ... or do they? For some, maybe, but reports come in weekly of illegal migrants asphyxiated in a poorly maintained transport module, or indentured on some remote asteroid with no way to leave, or thrown out of an airlock as soon as money changes hands, or arrested by the colony police for carrying false papers and having no qualifications for the heavy equipment they are operating ... the horror stories are many. Yet the Snakeheads are never out of work, people pay and the Snakeheads pull the strings that make the off-world illegal network operate. The desperate send their earnings back to family living in squalor back on Earth; in some cases a village may have clubbed together to sponsor a migrant – so great is the comparable wage they can send back.

The Federal Colonial Marshal Service has warned that the Snakeheads are active in the American Sector, clashing frequently in turf wars with the guerros of the Texan Cartel. American Snakeheads often have no Chinese heritage and remain invisible, an anonymous crime gang with operatives masquerading as workers, supervisors and managers – often in key areas, like transport, leisure and freight handling.

Texan Cartel

The Cartel is America’s most prolific and powerful organized crime syndicate, with gangs (maras) active across North and South America as well as the colonies and outpost worlds of the American Sector. The Cartel originated in the prisons and penitentiaries of west Texas in the 1990s, but unlike most Hispanic street gangs that began this way, it lasted the course, took a hold in cities like Houston, Phoenix and San Diego and soon moved into territories more associated with the American Mafia. By the end of the 22nd century the Cartel had successfully moved away from street crime and into money laundering, corporate extortion, labor racketeering and illegal property deals. Drug trafficking carried on apace. With the establishment of the Community of American States in 2159, the Cartel was able to expand easily in Central America and the northernmost nations of South America.

The syndicate's moment of glory came in the 2200 as contracts went out for the construction of the immense Trans-Atmospheric Pipeline in Macapa, Brazil. Thousands of workers from Ecuador, Peru, Colombia and Venezuela were hired on to the vast project, and the Texan Cartel saw its chance. It had already penetrated the labor markets of those countries and now earned millions of dollars a day from labor wranglings and union fees. Once completed, the Cartel looked to the stars and followed the same Hispanic workers as they travelled Off-World to find employment in iridium mines and on remote asteroid drilling platforms. Few mining installations or colonies in the American Sector are without at least one Cartel soldier, dealer or fixer. The larger colonies even sport their own gangs, run by a ruthless Cartel captain who masquerades as some middle-manager or union boss. If you want drugs, or a new identity, a forged pass or a rival 'greased' then get in touch with the Texan Cartel. There's a member near you – you just don't know it.

The tough guys of the Cartel are the guerros, the soldiers. In cities where the Cartel thrives, a gang or mara of around 30 or so soldiers is led by a captain and his lieutenants. There are plenty of wannabe gangsters, and these cholos are used extensively by the Cartel as runners, drug mules, patsies and for low-level thuggery. Members refer to one another as 'brother' or 'sister', and cover their bodies in elaborate tattoos as they rise up through the ranks.

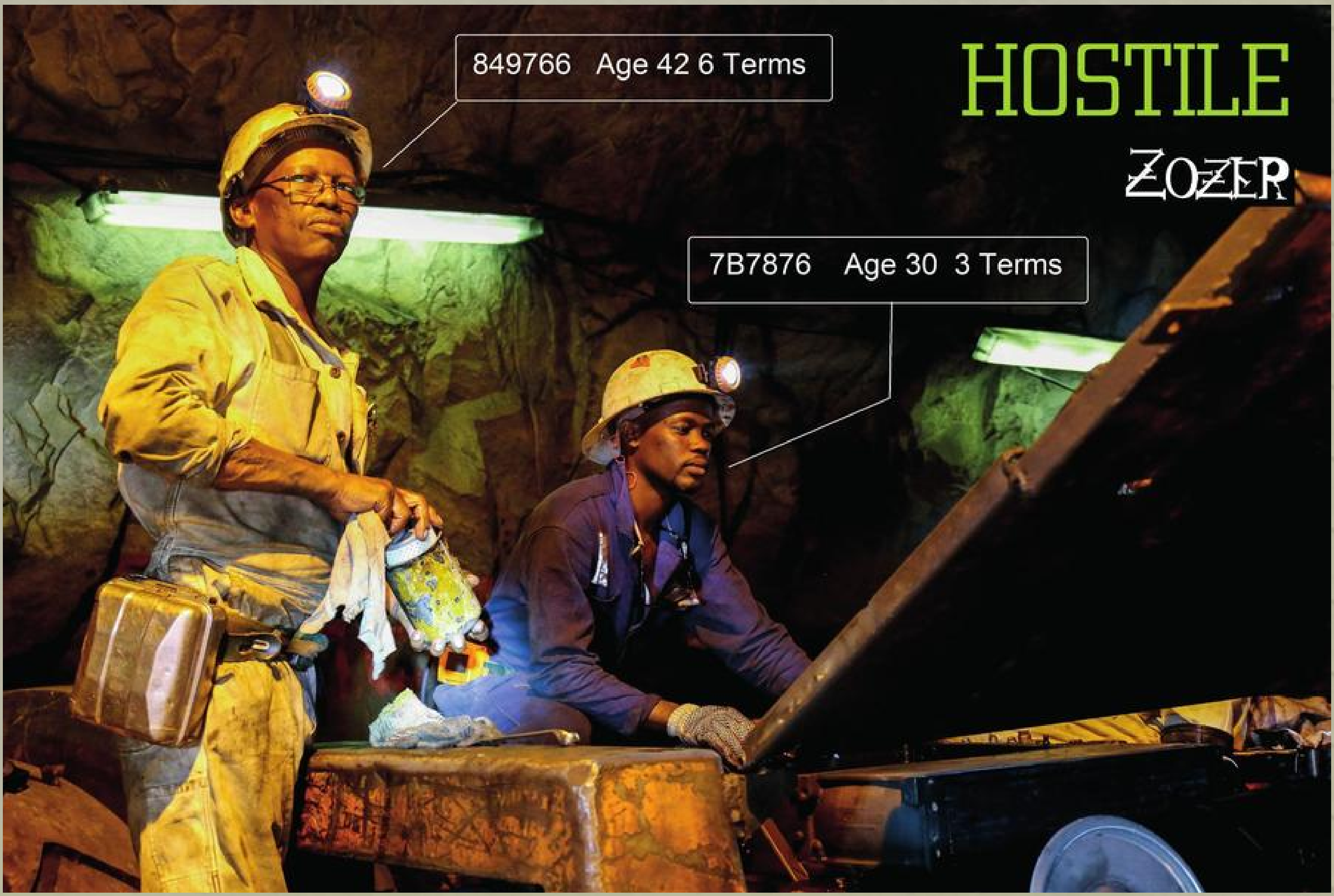
The Cartel has great influence through labor racketeering. This is where corrupt influence and in some instances even control has been gained over a labor union, through a climate of fear and intimidation among its members, and by threats and acts of violence. The Cartel has placed associates in key positions and exploits illegal proceeds from the lucrative operation of union's affairs. Understanding that it can make easy and regular money from union infiltration, the Cartel bosses bribe leaders or join the union themselves as leaders. They can then extort any company that the union has dealings with; either by threatening 'slow-downs', strikes or even industrial sabotage. The Cartel can offer a construction or mining company a 'strike insurance scheme', receiving hundreds of thousands of dollars just from the threat of striking, alone. Even if the company plays hardball and pushes the union to strike, the Cartel will not sit idly by and watch strike-breakers help the company out, instead it will harass, beat up or even kill those brave enough to break the strike. Unless the company pays up, the Cartel will go easy on strike-breakers should a payment be forthcoming. Power, leverage and labor are all intertwined.
Some of the Cartel generals control their own mining and space-based businesses and use Cartel-dominated unions in order to secure loans at favorable rates, or to manipulate the supply and cost of labor to their own companies. In some parts of the American Sector, the only independent companies (those not owned by a large corporate concern) are Cartel owned, since the small legitimate businesses have been forced out of the industry through unprofitability – they just can't afford the labor!

Lebkuchen

Members of the German Lebkuchen are genetic activists, fighters for the rights of cloned human beings. Speed-grown clones ('proles') were used as colonists until they went on a murdering spree on Paydirt in 2151. After some investigation it was revealed that the force-grown clones were all sociopaths - emotionally illiterate, troubled, and without any sense of morality or conscience. For a new batch of proles implanted training and memory programs were utilized, but colonists no longer trusted these corporate slaves. They are, today, a second-class person, tolerated in places, reviled in others. Proles have a built-in four-year lifespan. Lebkuchen fight to give them human rights.

When Lebkuchen activists broke in to the facilities of Haruna Corporation in Munich, 2209, they discovered human clones being held captive. Haruna had lucrative contracts with millionaires and billionaires to clone their bodies as a source of organs for organ replacement. The clones or ‘replicants’ were a product of forced growth and kept in a coma until their organs were needed for donation. Assisted by a scientist on the inside of Haruna, the activists freed the replicants, awakened them from their induced comas and then paid members of the Snakeheads people-smuggling crime gang, to provide new IDs for them. Lebkuchen had no idea what they were dealing with, however, and the replicants rebelled, killing and torturing many of their ‘saviors’ before fleeing across Europe. Some maintained links with the Snakeheads to become emotionless gang members and assassins-for-hire. Many innocent people were killed in the replicant uprising of 2209 and police were able to shoot several of them dead.

Today there are believed to be almost 320 clones roaming free, some in the service of the Snakeheads, whilst others masquerade as normal human beings using their forged Snakehead identities. At any moment they might flip, causing destruction, pain and death before fleeing the scene and adopting yet another identity. They cannot be reasoned with, retrained or rehabilitated. Replicants are feared – and executed as soon as they are identified.



HIRING ON & SKILLS

5

Player characters in HOSTILE are spacers – people living and working in space. The character ideas in this chapter reflect that central idea.

A broad range of character types are possible and all of these have a reason to be off-world.

The following character teams are perfectly suited to the HOSTILE setting:

- Colonists
- Corporate Investigators
- Freelance Miners
- Commercial Starship Crew
- Resource Exploration Team
- United States Marines
- Private Military Contractors
- And more ...

> If you think hiring professionals is expensive - try hiring amateurs . . .
>
> Nik Deacon, President of Tharsis Motors

WHO ARE WE?

Colonists - The players are workers on a colony. They might struggle to maintain the infrastructure, deal with unreliable equipment and survive the harsh environment. They might be a crew of lumberjacks, ranchers, wildcatters or local homesteaders; or they might be the key decision makers and leaders of the colony.

Corporate Investigators – PCs are corporate agents, bodyguards, investigators and technical experts who are dispatched to the Off-World colonies in order to investigate and then solve problems. Each mission is different from the last, each involves travel to alien worlds and each mission invariably involves danger.

Freelance Miners – A group of experienced miners might hire themselves out as technical experts; it may include roughnecks and technicians, perhaps a spacer or colonist and maybe even a corporate exec as a manager. They are called in to deal with difficult, unusual, dangerous or illegal situations involving mining, colony construction and oil drilling.

Commercial Starship Crew – This commercial starship crew has a ship and hire it, and themselves, out (a 'wet' lease) to undertake charters and special one-of-a-kind missions. Sometimes it's just hauling cargo because the regular freighter is unserviceable. More often the cargo is hazardous, or has to go somewhere off the beaten track, or it is dangerous or illegal. The crew don't ask questions and their lives (and the missions themselves) are varied, interesting and not without danger.

Resource Exploration Team – Mining corporations are always looking for the next big mineral strike and employ resource exploration teams to survey and scout out new star systems and the hundreds of remote moons and planets in systems scattered throughout human-colonized space. They are on their own, however, and so team members must be tough, resourceful and skilled. They will encounter many hazards, some of which may be horrific in nature - the universe is full of nasty surprises…

United States Marines – Throughout the American Sector of space, hostile threats to colonists, corporations and commercial starships are often met with a military response. The US Marine Corps is equipped with state-of-the-art dropships, advanced combat rifles, missiles and scanners and has a track record of dealing with all manner of violent situations. Interstellar hijackings, terror situations, uprisings, colonial insurgencies and inter-colony strife may all result in Marine Corps intervention. In addition there are the many hostile exomorph (alien) organisms that threaten the safety of colonists and ship crews. Some of these exomorphs are really nasty. These missions are routinely non-routine and incredibly dangerous. The wildly different environments and unpredictability of hostile alien predators make every one unique and challenging.

Private Military Contractors – In a universe dominated by large corporations, and where the US military cannot be everywhere at once, private military contractors (PMCs) thrive. They struggle to distance themselves from the label of 'mercenary', but the PMCs are not a bunch of war-crazy army veteran thugs-with-guns looking to fight for the highest bidder. PMCs do employ military veterans, but they train them, equip them and then have them sign up to contracts which are honoured by both PMC and client. A PMC security advisor has been honourably discharged, often having served several tours and at least a decade in the US Army or US Marines. He is a skilled professional and will find himself supplementing US Marine forces in some brushfire war, or acting as security for some corporate project. The missions are diverse, and can range from protecting a colony from an alien predator, to retaking an installation that has been seized by terrorists.

Of course one-off scenarios can be created with *any* suitable collection of characters, from colonists to miners, corporate execs to Federal Marshals – it all depends on the scenario setting and the situation that is about to unfold.

ROLEPLAYING ANDROIDS

Androids are programmed to be passive and non-aggressive, not to lead or to take control – in other words they do not make very good player characters. They are constrained to blend in, provide support and suggestions for a team of humans. Referees should only allow a player character android after some thought. Never, never, never allow an android PC in the game that has 'broken its programming' or 'been reprogrammed by the Company'. Androids are high-tech servants and sophisticated equipment operators that do not feel the crippling mental damage suffered by humans in hyperspace, this means they can remain out of hypersleep to monitor ship systems.

To create an android NPC (or player character) a truncated generation system is used. Androids only serve 1D+3 terms before play begins. Due to the restrictions imposed by their Model/3 processor and Intellect software, they can only learn a skill up to level 3, and can learn a maximum number of skill levels equal to 6. Any additional skill gains made during the character generation process must be taken at level 0.

There are four general fields (Occupations) an android can be created for: spacer, survey scout, physician, scientist and technician. The android will gain the first skill (at level 1) on the appropriate skill table as an automatic skill when the occupation has been decided. For all other skill gains, using 1D6, rolling 5-6 each term for a skill gain.

Many humans treat androids as tools, like forklifts or toasters, and these people refer to the artificial people as 'it', 'boy' or 'girl' rather than the manufacturer's designation. Other terminology is used, too, such as 'the doll' or 'the puppet'.

All civilan androids follow **Asimov's Three Laws of Robotics**:

1. A robot may not injure a human being or, through inaction, allow a human being to come to harm.
2. A robot must obey the orders given it by human beings except where such orders would conflict with the First Law.
3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Laws.

CHARACTER CREATION

The **HOSTILE** Rules Handbook includes its own complete character creation system. For those using Cepheus Engine, there are slight differences and these are addressed below. This chapter also includes fifteen careers that are tailored to the retro-industrial future of **HOSTILE**.

Homeworld Skills

Characters should either come from Earth or from an Off-World colony within the Near Earth Zone (the Core Worlds). Chances are very high that they come from Earth, only a tiny few in comparison are born out on the colonies. Roll 2D6: 2-8 indicates Earth-borne, 9-12 indicates Off-World Colony. Select ONE skill.

Homeworld	Homeworld Skills (select one)
Earth	Ground Vehicle, Brawling, Streetwise, Carousing
Off-World Colony	Vacc Suit, Survival, Brawling, Vehicle

Primary Education Skills

The list here differs from that given in Cepheus Engine. Any character may choose a zero-level skill from the following list:

- Administration
- Agriculture
- Comms
- Computer
- Electronics
- Engineering
- Gambling
- Investigate
- Liaison
- Mechanical
- Medical
- Steward
- Survival

Characteristics

Use the standard six characteristics as described in Cepheus Engine. Note, however, that higher levels of Social Standing equate (in **HOSTILE**) not to noble titles and peerages, but to family connections with the wealthiest and most influential ('executive') levels of corporate power. These are executive ranks in the corporation, equating to 'governmental' positions. The Vice President ('A') is the highest non-executive title; and that rank denotes the head of a division/ department.

Social Standing

10	(A)Vice President
11	(B) Senior Vice President
12	(C) Executive Vice President
13	(D)Senior Executive VP
14	(E)Director
15	(F) President
16	(G)Chairman

Qualifying For the Draft

If Qualification is failed the referee may allow the character to attempt to enlist into one other career, otherwise the character submits to the Draft. Roll 1D6:

1D6	Draft Assignment
1	Action for Peace Foundation (as Ranger)
2-4	Colonist
5-6	Roughneck

Characteristic Rolls

The following rolls: Qualify, Survival, Commission and Advance are Average characteristic rolls; add the bonus to your roll, if one is listed

Careers

The following fifteen career paths will be fully detailed:

- **Android:** A bio-mechanical synthetic human, designed to carry out monotonous or hazardous tasks. There is a special player generation system for androids (see pages 157-158).
- **Corporate Agent:** A corporate 'fixer', a spy, a diplomat and deal-maker, who carries out the will of the corporation on the Off-World Colonies.
- **Corporate Executive:** A well-connected corporate executive now working freelance on special projects. He is a patron, financier, logistics expert and manager. If it might make a profit – he's in! Requires Soc A+. Begins at a rank equal to his Soc.
- **Colonist:** Individual that moves to a new world or settles in a new planetary colony.
- **Commercial Spacer:** A crewman or officer aboard a commercial transport starship.
- **Marine:** Member of the United States Marine Corps (USMC), trained to respond to threats in the American Sector.
- **Marshal:** Either a US Federal Colonial Marshal or Deputy assigned to keep the peace on one of the American Sector's many installations, or a colonial Protection and Security (PAS) law enforcement officer.
- **Military Spacer:** A crewman or officer aboard a United States Space Command (USSC) warship.
- **Physician:** A doctor, med-tech, nurse or paramedic.
- **Ranger:** A civilian guide and survival expert on a habitable world; also paid members of the Action For Peace Foundation. (a volunteer paramilitary NGO)
- **Rogue:** A criminal, making money fromextortion, theft, assignation, burglary etc.
- **Roughneck:** A miner working in the hazardous environment of deep space.
- **Scientist:** Individual with expert knowledge of a science, especially a biological or physical science.
- **Survey Scout:** Member of a corporate resource exploration team, surveying unfamiliar territory in space.
- **Technician:** A skilled mechanic, electrician, computer expert or engineer.

Commission

Gaining a commission is essential to move from Rank 0 to begin climbing the rank table. Military Spacer and Marine include 'non-commissioned ranks' for flavour. Non-commissioned rank is equal to the number of terms served.

Basic Training

Ignore the Basic Training rules in Cepheus Engine. Characters do not receive all the skills on the Service Skill table at level 0. Instead, gain two skill rolls in term 1, and then one skill roll each consecutive term. Roll on any of the tables, although Advanced Education requires Edu 8+.

Mustering Out

All except Android characters should follow the standard mustering out procedure described in the Rules. Each career has its own Mustering Out Benefits Table, but all of the careers (except for Android) use the single, generic cash table given below. These cash figures are much lower than those given in the Rules and this is designed purely to get players-characters motivated. A Marine general might have rolled low, but the player can explain this in any number of ways: he is going through a costly divorce; he has had to pay huge medical bills; his wealth is tied up in an estate, etc.

1D6	Cash
1	$500
2	$1000
3	$1000
4	$5000
5	$8,000
6	$10,000
7	$20,000

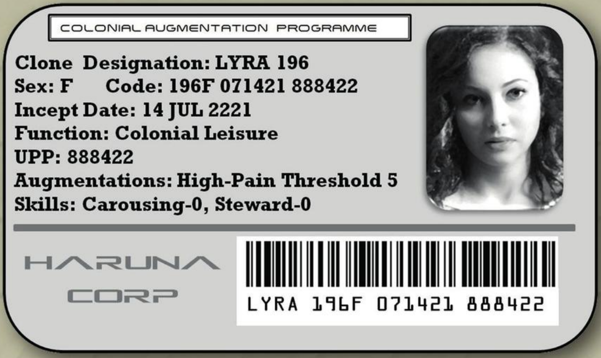
Weapon: Select a blade weapon or a firearm, appropriate to the situation and character. If the character does not have the skill to use the weapon then they gain the appropriate skill at level-0 in addition to the weapon itself. Additional receipt of the weapon benefit can be taken as one level in the appropriate weapon skill.

Awards: The Marine and Military Spacer may receive an award (medal) along with a Soc increase. If gained a second time, accept only the Soc increase.

Standard-Class Starship Ticket: This is a ticket on a commercial liner, and the character will, like all passengers, be put into hypersleep for the flight in order to survive hyperspace. With a standard-class ticket the passenger is frozen at the starport and shipped to the starship like freight. He or she has a meagre 10kg baggage allowance that fits into the locker at the foot of the hypersleep pod. Equivalent to Low Passage.

Elite-Class Starship Ticket: There are two main perks of an elite-class ticket. First, the ship's android is assigned to 'medwatch' all e-ticket holders; secondly, the passenger is carried within an Autonomous Crew Ejection Pod that has an armoured casing (AR 20) providing security and insurance for the occupant. These pods are mounted on standard evacuation hatches and in an evacuation situation the ship's computer jettisons the pod. Using its own thrusters, it moves into a stable orbit and activates its beacon. It has its own automatic re-entry kit installed and may initiate an automated re-entry and landing at a habitable dirtside location if it seems more likely to ensure the occupant's survival. For more information on Autonomous Crew Ejection Pods, see Emergency Escape Vehicles in Chapter 10. Its locker holds a DeWitt Class 3 Survival Bag and a 10 kg luggage compartment.

Star Envoy Club Membership: The Star Envoy Club is a Hong Kong-based organization that aims to make interstellar travel as bearable (or as the club says 'enjoyable') as possible for its members. It is most often used by corporate executives and other wealthy businessmen that are the only people who can afford the membership fee. The Star Envoy Club maintains small (and very private) hotels and lounges at all class A and class B starports that are accessible only to members and their guests. Deals with all the major carriers mean that the Club can offer an elite-class travel ticket to every member once every two months. Tickets not used can be cashed in for purchase price. Membership of the Club is a privilege and says much about the character's wealth and social standing. Membership on the Mustering Out Tables often indicates a reward for exceptional service or heroism.



COLONIAL AUGMENTATION PROGRAMME

Clone Designation: LYRA 196
Sex: F **Code:** 196F 071421 888422
Incept Date: 14 JUL 2221
Function: Colonial Leisure
UPP: 888422
Augmentations: High-Pain Threshold 5
Skills: Carousing-0, Steward-0

HARUNA
CORP

LYRA 196F 071421 888422

ANDROID

Humans are frail, vulnerable and excitable. You are not. Built upon a carbon fibre skeleton, with silicon musculature and a bio-plastic skin, you are a machine, a synthetic - an artificial person. You can work with humans as part of a team, supporting and advising. Their lives are precious to you, as is the mission. You know you are more expendable than they, yet the company will not want you to sacrifice yourself needlessly - you cost a helluva lot of money!

ANDROID CAREERS

1D6	Service
1	Commercial Spacer
2	Military Spacer
3	Survey Scout
4	Physician
5	Scientist
6	Technician

TERMS & SKILLS

Terms Served : 1D+3

Autoskill: Gain first skill in career list at level 1.

Other Skills: On 1D6 roll 5-6 each term for a skill gain. Skill limit 6 levels. Max skill level =3

CHARACTERISTICS

Strength	1D6+5
Dexterity	1D6+3
Endurance	1D6+8
Intelligence	1D3+5
Education	1D3+9
Social Standing	7

MUSTER OUT

1	$5000
2	$1000
3	Standard Ticket
4	Standard Ticket
5	$1000
6	$5000

	COMMERCIAL/ MILITARY SPACER	SURVEY SCOUT	PHYSICIAN	SCIENTIST	TECHNICIAN
1	Pilot	Pilot	Medical	Investigation	Engineering
2	Engineering	Engineering	Medical	Computer	Electronics
3	Navigation	Navigation	Investigation	Investigation	Mechanical
4	Gunnery	Comms	Electronics	Computer	Comms
5	Computer	Survival	Computer	Admin	Security
6	Comms	Vehicle	Medical	Vehicle	Computer

MISHAPS

1 After being damaged in an accident, the company let you go.
2 You were forced to commit illegal acts, broke your programming and fled.
3 You don’t know what has happened to you. There is a gap in your memory. What happened?
4 You were reprogrammed by deck jockeys and now have no loyalties to your company.
5 Injured. Roll on the Injury Table.
6 You have gone rogue, murdered your employer and been injured during the escape.. Roll on the Injury Table.

CORPORATE AGENT

Profits are made in the American Sector, at mining installations, drill rigs, outposts and much larger Off-World Colonies. When those operations are under threat the corporations that own them send in their top agents. You have the tenacity and ruthlessness to fulfil this role. You will investigate and take appropriate action - whatever that may be. And the threats will be diverse: theft, extortion, alien parasites, mysterious alien viruses, hijacking, the list is long. With a gun and a security clearance you will do your job.

RANK & AUTOMATIC SKILLS

0	Agent
1	Senior Agent
2	Supervisor
3	Assistant Project Leader
4	Project Leader
5	Assistant Division Chief
6	Division Chief

CAREER

QUALIFY	INT 6+
SURVIVAL	DEX 5+
COMMISSION	SOC 5+
ADVANCE	INT 7+
RE-ENLIST	5+

MUSTER OUT

1	Weapon
2	Standard Ticket
3	Weapon
4	+1 Int
5	+1 Edu
6	+1 Soc
7	+1 Soc

	PERSONAL DEVELOPMENT	SERVICE SKILLS	SPECIALIST SKILLS	ADVANCED EDUCATION SKILLS
1	+1 Str	Gun Combat	Forgery	Medical
2	+1 Dex	Vacc Suit	Investigate	Security
3	Bribery	Vehicle	Computer	Admin
4	+1 Int	Streetwise	Carousing	Computer
5	+1 Edu	Gun Combat	Comms	Leader
6	+1 Soc	Recon	Jack-of-Trades	Tactics

MISHAPS

1 A corporate defection went wrong and you were wounded. Roll on the Injury Table.
2 Your team was annihilated in a double-cross.
3 A rival corporation killed members of your family and wounded you. Roll on the Injury Table.
4 You learnt a secret about your employer and had to get out – fast.
5 An investigation uncovered government corruption, but you were forced to step down.
6 You failed to stop damage/disease/worker unrest at an Off-World outpost.

CORPORATE EXEC

The Earth depends on the corporations and conglomerates. The incredible costs of space transport, exploration and development were long-ago privatised. You are from a top-level, privileged executive family and the doors were opened to you at a young age, managing multi-million operations for your family. Today you work freelance, still loyal to your conglomerate, but now making money for yourself, looking for opportunities, profits to exploit, untapped resources. You could make millions – and a reputation – but you will need the help of experts in the field.

RANK & AUTOMATIC SKILLS

1	Vice President [**Broker 1**]
2	Senior Vice President
3	Executive Senior Vice President
4	Senior Executive Vice President
5	Director
6	President

CAREER

QUALIFY	Special
SURVIVAL	Basic 3+
COMMISSION	EDU 5+
ADVANCE	INT 10+
RE-ENLIST	4+

MUSTER OUT

1	Elite Ticket
2	+1 Edu
3	+1 Int
4	Elite Ticket
5	Star Envoy Club Member
6	Elite Ticket
7	+1 Soc

	PERSONAL DEVELOPMENT	SERVICE SKILLS	SPECIALIST SKILLS	ADVANCED EDUCATION SKILLS
1	Streetwise	Gambling	Broker	Medical
2	+1 Int	Admin	Liaison	Computer
3	+1 Edu	Carousing	Vehicle	Admin
4	+1 Soc	Leader	Broker	Liaison
5	Carousing	Bribery	Computer	Leader
6	Bribery	Forgery	Leader	Jack-of-Trades

MISHAPS

1 Your private hit team messes up, implicating you in a dirty black ops strike.
2 A rival exec conducted a smear campaign against you, forcing you out of a job.
3 Your orders to a mining outpost got a lot of the workers killed.
4 Your ties to the underworld unravel – and you must leave the company.
5 The corporation rationalizes your department and you are 'let go'.
6 Injured. Roll on the Injury Table.

COLONIST

A new life awaits you in the Off-World Colonies, it is a chance to leave behind the poverty of an Enterprise Zone to begin again in a golden land of opportunity and adventure. You need to be independent and hard-working, and you will learn to fend for yourself as a farm technician or colony worker. Your skills are varied and useful, from vehicle operations to wilderness survival, mechanical repair to marksmanship. Be a homesteader - a colonist - a next generation human.

RANK & AUTOMATIC SKILLS

0	Colonist
1	Team Leader
2	Supervisor
3	Department Chief
4	Assistant Operations Manager
5	Operations Manager
6	Colonial Administrator

CAREER

QUALIFY	END 5+
SURVIVAL	END 6+
COMMISSION	INT 7+
ADVANCE	EDU 6+
RE-ENLIST	5+

MUSTER OUT

1	Standard Ticket
2	+1 Int
3	Weapon
4	Standard Ticket
5	Standard Ticket
6	Elite Ticket
7	+1 Soc

	PERSONAL DEVELOPMENT	SERVICE SKILLS	SPECIALIST SKILLS	ADVANCED EDUCATION SKILLS
1	+1 Str	Mechanical	Loader	Medical
2	+1 Dex	Comms	Carousing	Agriculture
3	+1 End	Agriculture	Jack-of-Trades	Jack-of-Trades
4	+1 Int	Electronics	Engineering	Liaison
5	Brawling	Survival	Agriculture	Admin
6	Gun Combat	Vehicle	Vehicle	Leader

MISHAPS

1	A colony accident left you injured. Roll on the Injury Table.
2	Your colony is struck by disaster and you took some of the blame.
3	New colonial leaders decided you and your crew were troublemakers.
4	A civil disturbance was put down by the corporation. Roll on the Injury Table.
5	You outgrew the colony. You didn't fit in anymore.
6	Your ideas are revolutionary and unpopular - colonists attacked you and your settlement.

COMMERCIAL SPACER

Cargo provides the life-blood of interstellar society and you will man the commercial starships that ply this far-flung network. Missions are often months-long, but the destinations can range from busy orbital stations to remote mining outposts. You will be technically competent; perhaps a star pilot, chief engineer, cargo loadmaster or navigator, and your role will be crucial to the operation of the vessel. See the Universe - Make a Difference -Get Paid!

RANK & AUTOMATIC SKILLS

0	Crewman [**Vacc Suit 1**]
1	Fourth Officer
2	Third Officer
3	Second Officer
4	First Officer [**Pilot 1**]
5	Captain
6	Senior Captain

CAREER

QUALIFY	INT 4+
SURVIVAL	INT 5+
COMMISSION	INT 5+
ADVANCE	EDU 8+
RE-ENLIST	4+

MUSTER OUT

1 Standard Ticket
2 +1 Edu
3 Weapon
4 Elite Ticket
5 +1 Int
6 Elite Ticket
7 Star Envoy Club Member

	PERSONAL DEVELOPMENT	SERVICE SKILLS	SPECIALIST SKILLS	ADVANCED EDUCATION SKILLS
1	+1 Str	Comms	Vacc Suit	Medical
2	+1 Dex	Bribery	Mechanical	Computer
3	+1 End	Gun Combat	Loader	Broker
4	+1 Str	Loader	Electronics	Pilot
5	Brawling	Broker	Steward	Engineering
6	Vacc Suit	Vehicle	Navigation	Navigation

MISHAPS

1 Caught smuggling illegal goods; you take the blame for your starline and are fired.
2 Your starship is being scrapped and your crew retired.
3 Your ship is destroyed and as the only survivor, you receive the blame.
4 Substance abuse destroys your career.
5 Your ship is hijacked and your crew are all badly treated. Roll on the Injury Table.
6 Injured. Roll on the Injury Table.

MARINE

Semper fidelis - 'Always Faithful'. You want to join the military, you want to join the best. The US Marine Corps is the world's premier rapid reaction commando force, a full-equipped army that can move anywhere to carry out any task at short notice. And now it has access to the stars. Trained for war, you will also be expected to deal with hostile predators on alien worlds, in the most extreme conditions imaginable.

RANK & AUTOMATIC SKILLS

	Non-Commissioned	**Officer**
0	Private [**Gun Combat 1**]	-
1	Lance Corporal [**Vacc Suit 1**]	Lieutenant [**Vacc Suit 1**]
2	Corporal	Captain
3	Sergeant	Major
4	Staff Sergeant	Lieut. Colonel
5	Gunnery Sergeant	Colonel
6	Master Sergeant	General

CAREER

QUALIFY	INT 4+
SURVIVAL	END 6+
COMMISSION	EDU 9+
ADVANCE	EDU 6+
RE-ENLIST	6+

MUSTER OUT

1 Standard Ticket
2 Silver Star and +1 Soc
3 +1 Edu
4 Weapon
5 Star Envoy Club Member
6 Elite Ticket
7 +2 Edu

	PERSONAL DEVELOPMENT	SERVICE SKILLS	SPECIALIST SKILLS	ADVANCED EDUCATION SKILLS
1	+1 Str	Ground Vehicle	Vehicle	Medical
2	+1 Dex	Comms	Mechanical	Security
3	+1 End	Gun Combat	Electronic	Tactics
4	Gambling	Survival	Demolitions	Computer
5	Brawling	Gun Combat	Recon	Leader
6	Blade Combat	Vacc Suit	Hvy Weapons	Admin

MISHAPS

1 During a mission you are captured and injured, when released you are honourably discharged.
2 You argue with a senior officer who drives you out of the Marines.
3 Injured while on duty. Roll on the Injury Table.
4 Battle injury. Roll twice on the Injury table, using only the lower result. You receive a Purple Heart.
5 You were involved in an illegal operation, your conscience forces you to resign.
6 Fighting hostile alien exomorphs, you save colonists, but are injured. Roll on the Injury Table.

MARSHAL

Human nature never changes, you know this and it's probably why you're interested in joining the Marshal Service. Crime has spread out from Earth into the American Sector and the Federal Marshals are the most effective way to counter it. Trafficking of drugs, weapons and humans must be thwarted. Crime gangs extort money from vulnerable colonists and miners, or try to skim profits from the operations. You might not have any back up - but you have your training, your wits and your integrity.

RANK & AUTOMATIC SKILLS

0	Deputy [**Investigate 1**]
1	Senior Deputy
2	Supervisory Deputy
3	Assistant Chief
4	Chief Deputy
5	Marshal
6	Division Chief

CAREER

QUALIFY	INT 7+
SURVIVAL	DEX 6+
COMMISSION	EDU 8+
ADVANCE	INT 7+
RE-ENLIST	5+

MUSTER OUT

1	Standard Ticket
2	Elite Ticket
3	+2 Int
4	+1 Edu
5	Weapon
6	Elite Ticket
7	+1 Soc

	PERSONAL DEVELOPMENT	SERVICE SKILLS	SPECIALIST SKILLS	ADVANCED EDUCATION SKILLS
1	+1 Str	Streetwise	Gun Combat	Medical
2	+1 Dex	Brawling	Comms	Tactics
3	+1 End	Brawling	Ground Vehicle	Investigate
4	+1 Int	Investigate	Security	Computer
5	+1 Edu	Recon	Computer	Tactics
6	+1 Soc	Gun Combat	Medical	Admin

MISHAPS

1 A riot or disturbance breaks out and several marshals are injured. Roll on the Injury Table.
2 A deputy in the team works for a crime boss and sets you up.
3 You uncover a drugs ring at an outpost, but the manager is in on it and tries to have you killed.
4 A crime-lord bought off your team, forcing you to quit.
5 Your team were killed in a fouled mission – and it was your fault.
6 Injured while on duty. Roll on the Injury Table.

MILITARY SPACER

Space Command represents the most powerful arm of the United States military and you will be a crucial member of this service. Its starships cross hyperspace to defend American Off-World Colonies as well as the remote outposts of American corporations. You may be a pilot or engineer, a weapons officer or sensor operator, technically competent, highly motivated and extremely well trained.

RANK & AUTOMATIC SKILLS

	Non-Commissioned	**Officer**
0	Airman [**Vacc Suit 1**]	-
1	Airman First Class	Lieutenant
2	Senior Airman	Captain
3	Sergeant	Major
4	Staff Sergeant	Lieutenant Colonel
5	Technical Sergeant	Colonel [**+1 Soc**]
6	Master Sergeant	General

CAREER

QUALIFY	INT 6+
SURVIVAL	INT 5+
COMMISSION	SOC 7+
ADVANCE	EDU 6+
RE-ENLIST	5+

MUSTER OUT

1 Distinguished Flying Cross and+1 Soc
2 +1 Edu
3 +2 Edu
4 Elite Ticket
5 Standard Ticket
6 Elite Ticket
7 Star Envoy Club Member

	PERSONAL DEVELOPMENT	SERVICE SKILLS	SPECIALIST SKILLS	ADVANCED EDUCATION SKILLS
1	+1 Str	Vacc Suit	Gunnery	Medical
2	+1 Dex	Computer	Mechanical	Navigation
3	+1 End	Loader	Electronics	Engineering
4	+1 Int	Gunnery	Engineering	Computer
5	+1 Edu	Brawling	Leader	Pilot
6	+1 Soc	Gun Combat	Comms	Admin

MISHAPS
1 An accident is blamed on you. Several crewmen were killed and you were discharged.
2 Your starship attacks a civilian ship by mistake, tarnishing the careers of all the crew involved.
3 You argue with a senior officer who drives you out of Space Command.
4 Injured while on duty. Roll on the Injury Table.
5 A deadly alien infestation on-board ship that you survive is covered up by Space Command.
6 You are wounded during an interstellar battle. Roll on the Injury Table.

PHYSICIAN

Medical facilities are in short supply across the Off-World Colonies, your skill as a doctor makes you a valuable asset for any starship, outpost, colony or mine. And don't think you will be dispensing medicines all day - you will often be faced with the Unknown and called upon to provide answers. Alien parasites, alien plagues and illnesses, and the strange toxic effects of local wildlife are just some of the challenges you are likely to face.

RANK & AUTOMATIC SKILLS

0	Medical Student [**Medical 1**]
1	Intern [**Medical +1**]
2	Junior Doctor [**Medical +1**]
3	Doctor
4	Doctor
5	Consultant
6	Senior Consultant

CAREER

QUALIFY	INT 9+
SURVIVAL	INT 3+
COMMISSION	EDU 6+
ADVANCE	EDU 8+
RE-ENLIST	4+

MUSTER OUT

1	Standard Ticket
2	+1 Edu
3	+1 Edu
4	Elite Ticket
5	Trauma Kit
6	Elite Ticket
7	+1 Soc

	PERSONAL DEVELOPMENT	SERVICE SKILLS	SPECIALIST SKILLS	ADVANCED EDUCATION SKILLS
1	+1 Str	+1 Dex	Liaison	Liaison
2	+1 Dex	Electronics	Investigate	Medical
3	+1 End	Medical	Mechanical	Admin
4	+1 Int	Streetwise	Electronics	Computer
5	+1 Edu	Medical	Computer	+1 Int
6	+1 Soc	Investigate	Admin	+1 Edu

MISHAPS

1 Your work is sabotaged and blackened by a third party. Lose all benefits.
2 A disaster with several casualties is blamed on you. Roll on the Injury Table.
3 You are involved in illegal research and rumours are spread about you. Reduce Soc by 1.
4 You win a malpractice suit, but are forced to leave the profession.
5 You are responsible for several deaths, serve several months in prison and are then released.
6 A rival corporation attacks your facility/operation. Roll on the Injury Table.

RANGER

Garden worlds (Earth-like or nearly Earth-like) are scattered across the Core. You will immerse yourself in the local environment to provide knowledge and skills that will be invaluable to your colonial brethren. You will be a wilderness and survival expert who can carry out search and rescue operations, resource identification and serve as a scout and guide for colonial expeditions across the planet. Members of the Action For Peace Foundation are also Rangers.

RANK & AUTOMATIC SKILLS

0	Ranger [**Survival 1**]
1	Assistant Team Leader
2	Team Leader
3	Deputy Chief Ranger
4	Chief Ranger
5	Area Commander
6	District Commander

CAREER

QUALIFY	END 9+
SURVIVAL	STR 6+
COMMISSION	INT 5+
ADVANCE	END 6+
RE-ENLIST	5+

MUSTER OUT

1	Standard Ticket
2	Standard Ticket
3	Weapon
4	Weapon
5	+1 Dex
6	+2 Str
7	Elite Ticket

	PERSONAL DEVELOPMENT	SERVICE SKILLS	SPECIALIST SKILLS	ADVANCED EDUCATION SKILLS
1	+1 Str	Gun Combat	Mechanical	Medical
2	+1 Dex	Agriculture	Electronics	Computer
3	+1 End	Survival	Comms	Jack-of-Trades
4	+1 Int	Recon	Recon	Leader
5	Gun Combat	Ground Vehicle	Ground Vehicle	Medical
6	Blade Combat	Survival	Survival	Mechanical

MISHAPS

1 Injured on duty. Roll on Injury Table.

2 Your team locates a valuable resource, but a rival group seizes the site and claims it for their corporation.

3 An expedition ends in disaster, people are killed.

4 Attacked by dangerous alien exomorph. Roll on Injury Table.

5 You were lost in the wilderness and suffered exposure, after a vehicle crash/breakdown.

6 Your team fails to rescue a high status casualty stranded in the wilds.

ROGUE

The future's for you. They don't tell you that. Colonies. Corporations. Government EZ's. But we've got brothers out there in the stars. You wanna join the gang, make some money - sure, but we've got connections on colonies and planets and in star systems. You can cut and kill - prove yourself. Make us some money and sure, we'll be proud of you. Give you a slice of the action: a drugs ring, a hit, busting some marshal's face. The future's for you cholo.

RANK & AUTOMATIC SKILLS

0	Cholo [**Streetwise 1**]
1	Soldier [**Blade Cbt 1**]
2	Veteran
3	Lieutenant
4	Captain
5	Right Hand
6	General

CAREER

QUALIFY	END 6+
SURVIVAL	INT 6+
COMMISSION	STR 8+
ADVANCE	INT 6+
RE-ENLIST	5+

MUSTER OUT

1	Standard Ticket
2	+1 Soc
3	Weapon
4	Weapon
5	Elite Ticket
6	+1 End
7	Star Envoy Club Member

	PERSONAL DEVELOPMENT	SERVICE SKILLS	SPECIALIST SKILLS	ADVANCED EDUCATION SKILLS
1	+1 Str	Blade Combat	Streetwise	Tactics
2	+1 Dex	Gun Combat	Forgery	Bribery
3	+1 End	Brawling	Bribery	Forgery
4	Brawling	Vehicle	Demolition	Computer
5	Blade Combat	Recon	Security	Leader
6	Carousing	Vehicle	Blade Combat	Jack-of-Trades

MISHAPS

1 A job goes horribly wrong, you get the blame.
2 Arrested and convicted.
3 Criminal successes are followed by violent retaliations from a rival gang. Roll on the Injury Table.
4 Your crew make a bitter enemy, a police officer, and must lay low.
5 A gang rival forces you out of the organization.
6 Injured in a gang battle. Roll on the Injury Table.

ROUGHNECK

They call you a 'roughneck', but it's not an insult, it's a mark of respect. You will be working long shifts, operating heavy equipment and in some very hazardous environments. From oil drilling to rig operations, mining to equipment driving, you will be in high demand across the Outer Rim. You will need to be technically adept as well as tough, independent and a team player. The pay is good, but it has to be - it includes your danger money.

RANK & AUTOMATIC SKILLS

0	Roustabout [**Vacc Suit 1**]
1	Floorhand [**Mining 1**]
2	Assistant Driller
3	Driller
4	Toolpusher [**Mechanical 1**]
5	Superintendant
6	General Manager

CAREER

QUALIFY	DEX 8+
SURVIVAL	INT 6+
COMMISSION	STR 8+
ADVANCE	END 7+
RE-ENLIST	7+

MUSTER OUT

1	Standard Ticket
2	Standard Ticket
3	Weapon
4	Elite Ticket
5	+1 Edu
6	+1 Int
7	Elite Ticket

	PERSONAL DEVELOPMENT	SERVICE SKILLS	SPECIALIST SKILLS	ADVANCED EDUCATION SKILLS
1	+1 Str	Vacc Suit	Streetwise	Navigation
2	+1 Dex	Mining	Electronic	Medical
3	+1 End	Loader	Ground Vehicle	Electronics
4	Gambling	Demolitions	Mechanical	Computer
5	Vacc Suit	Comms	Mining	Engineering
6	Brawling	Ground Vehicle	Admin	Jack-of-Trades

MISHAPS

1 You suffer from illness caused by your work.
2 You are fired on a trumped up charge, just for speaking up for your comrades.
3 An accident is blamed on you, and you are fired.
4 Injured at work. Roll on the Injury Table.
5 You clash with your boss, who makes life too tough for you to continue.
6 Injured at work. Roll on the Injury Table.

SCIENTIST

The further we travel out across the stars, the less we know... Your research work in space will be fundamental to its exploitation and development, from cataloguing new species to determining planetary climates, poisonous atmospheric contents and even the causes of volcanism. Nothing can be taken for granted in the Off-World Colonies. Your work could mean the difference between life and death, profit and bankruptcy, success and catastrophe.

RANK & AUTOMATIC SKILLS

0 Researcher [**Investigate 1**]
1 Scientist
2 Senior Scientist
3 Deputy Science Leader
4 Science Leader
5 Assistant Director
6 Director

CAREER

QUALIFY	EDU 6+
SURVIVAL	INT 3+
COMMISSION	EDU 5+
ADVANCE	EDU 8+
RE-ENLIST	5+

MUSTER OUT

1 Standard Ticket
2 Elite Ticket
3 Elite Ticket
4 +1 End
5 +1 Soc
6 Weapon
7 Star Envoy Club Member

	PERSONAL DEVELOPMENT	SERVICE SKILLS	SPECIALIST SKILLS	ADVANCED EDUCATION SKILLS
1	+1 Str	Gun Cbt	Mechanical	Medical
2	+1 Dex	Comms	Electronics	Computer
3	+1 End	Investigate	Vacc Suit	Admin
4	+1 Int	Vehicle	Computer	Leader
5	+1 Edu	Comms	Investigate	Navigation
6	+1 Int	Survival	Vehicle	Jack-of-Trades

MISHAPS

1 Your work is sabotaged and blackened by a third party. Lose all benefits.
2 A rival corp attempts to kidnap you and steal your research; you must flee.
3 You are involved in illegal research and rumours are spread about you. Reduce Soc by 1.
4 An expedition goes wrong, resulting in several deaths.
5 Your experiments have unpredictable results, and the project is shut down for good.
6 A rival corporation attacks your facility/operation. Roll on the Injury Table.

SURVEY SCOUT

Oil, platinum, beryllium, titanium, tantalum, lithium - music to the ears of any Board of Directors. Your job as a corporate resource scout is to find these and other lucrative materials on moons, planets and asteroids. You will be exploring, prospecting, analysing and then staking your claim. And you must do this before teams from other corporations get there first.

RANK & AUTOMATIC SKILLS

0	Scout [**Survival 1**]
1	Senior Scout [**Pilot 1**]
2	Supervisor
3	Mission Specialist
4	Senior Mission Specialist
5	Mission Chief
6	Operations Chief

CAREER

QUALIFY	STR 7+
SURVIVAL	END 7+
COMMISSION	INT 4+
ADVANCE	END 8+
RE-ENLIST	3+

MUSTER OUT

1 Standard Ticket
2 +2 Int
3 +1 Edu
4 Weapon
5 Weapon
6 Elite Ticket
7 Star Envoy Club Member

	PERSONAL DEVELOPMENT	SERVICE SKILLS	SPECIALIST SKILLS	ADVANCED EDUCATION SKILLS
1	+1 Str	Vehicle	Vehicle	Medical
2	+1 Dex	Vacc Suit	Mechanical	Navigation
3	+1 End	Mechanical	Electronics	Engineering
4	+1 Int	Mining	Investigate	Computer
5	+1 Edu	Comms	Gunnery	Pilot
6	Gun Combat	Mining	Medical	Jack-of-Trades

MISHAPS

1 Injured on duty. Roll on Injury Table.
2 Crash on remote planet. Roll on Injury Table.
3 Your team locates a valuable resource, but a rival group seizes the site and claims it for their corporation.
4 An expedition ends in disaster and you are blamed for it.
5 Attacked by dangerous alien exomorph. Roll on Injury Table.
6 You are sent to a location by an corporate exec, but he knows it is dangerous, and your crew are

TECHNICIAN

Everyone is out in space building better worlds - only they can't do it without you. Skilled engineers and technicians hold interstellar society together, and when something goes wrong, you will be the first on the scene to work out what happened and how it can be fixed. Technicians rarely have the back-up that their Earth-bound counterparts enjoy, and so you will be paid to come up with creative solutions to difficult challenges.

RANK & AUTOMATIC SKILLS

0	Technician [**Electronics 1** OR **Mechanical 1**]
1	Team Leader
2	Supervisor
3	Department Chief
4	Assistant Technical Manager
5	Technical Manager
6	Administrator

CAREER

QUALIFY	EDU 7+
SURVIVAL	INT 4+
COMMISSION	EDU 4+
ADVANCE	EDU 8+
RE-ENLIST	5+

MUSTER OUT

1	Standard Ticket
2	Elite Ticket
3	Weapon
4	+1 Int
5	+1 Edu
6	+1 Dex
7	+2 Edu

	PERSONAL DEVELOPMENT	SERVICE SKILLS	SPECIALIST SKILLS	ADVANCED EDUCATION SKILLS
1	+1 Str	Vehicle	Investigate	Mechanical
2	+1 Dex	Electronics	Vehicle	Computer
3	+1 End	Mechanical	Computer	Admin
4	+1 Int	Comms	Security	Electronics
5	Brawling	Vacc Suit	Engineering	Engineering
6	Gun Cmbt	Loader	Jack-of-Trades	Jack-of-Trades

MISHAPS

1 Injured on duty. Roll on Injury Table.
2 Catastrophic fire is caused by your negligence.
3 A rival takes all the credit for your 'big project'.
4 You achieve great things during a terrible disaster. Roll on Injury Table.
5 You miscalculate and an important project fails.
6 You clash with your boss, who makes life too tough for you to continue.

HOSTILE

PERSONNEL Form 01/FGW/600932-D

OFFICIAL USE ONLY		
Returned	PSSS	Date

Name

Job Title

Rank

Terms/Age

/

Nationality

Videofone No.

Attach Photo

Work History

ICO UNIVERSAL PERSONALITY PROFILE

STR	DEX	END	INT	EDU	SOC

Training & Skills	ICO Lvl

Personal Details

List of Current Belongings

Current Balance: ($):

UCC *"Hire for Attitude"*
"Train for Skill"

Signature:
[Stay within the box]

ICO 67300-231 FPLLD -0056-X SECOND SERIES

SKILLS

Administration: Admin, paper-work, dealing with rules, regulations and officials, as well as law and legal personnel.

Agriculture: Growing and harvesting crops and raising animals, including hydroponics and aquaculture (on an ocean world).

Aircraft: Operation and control of atmospheric craft, including transport planes, fast jets, helicopters and tilt-rotors.

Brawling: Fighting unarmed or with blunt weapons such as clubs.

Blade Combat: Fighting with knives or other edged weapons.

Bribery: Offering bribes to circumvent local law, or to influence someone's decision. The cash bribe must be appropriate to the situation.

Broker: Locating suppliers and buyers, and facilitating the purchase and resale of commercial goods, haggling, bartering and so forth.

Carousing: Social skills, including picking up gossip or rumour, making friends and reading people's body language.

Comms: Operating drones, sensors and radio equipment. Skilled characters can boost an incoming or outgoing signal, create or break a secure channel, detect signals and anomalies, hide or piggyback on another signal, jam local communications, locate and assess potential threats, and analyse complex sensor data.

Computer: Operation and programming of computers, including creating or breaking data encryption; mining data effectively; creating or breaking data and network security protocols; overriding a computer protocol, as well as other general programming tasks.

Demolitions: Using demolition charges and other explosive devices, including assembling or disarming bombs.

Electronics: Operating and repairing complex electronic devices.

Engineering: Use and maintenance of powerplants, reactors and starship drives.

Forgery: Faking documents, currencies, and identification badges in order to deceive officials, government agents and security forces.

Gambling: Running games, winning games and making money! If he has the opportunity, the character can organizes games for others to play which will net him a nice cash win whilst still letting other gamblers also take away money.

Ground Vehicle: Operation and control of wheeled and tracked vehicles, including ATVs and Armoured Fighting Vehicles.

Gun Combat: Using and maintaining small arms including pistols and rifles, SMGs, lasers, machineguns and shotguns.

Gunnery: Using starship-mounted weaponry.

Heavy Weapons: Using military support weapons including rocket launchers, heavy artillery guns, tactical missile launchers, grenade launchers and high-velocity tank guns.

Investigate: Scientific analysis and the use of complex and accurate scientific tools and equipment to gather clues at a crime scene or scientific location.

Jack-of-Trades: A quick learner, able to pick up skills by watching and learning. He can always help any skilled character, making his JoT roll to provide a +1 bonus to the skilled character's attempt (in place of the normal skill required). The benefit of JoT is that the character with the skill can assist anyone, carrying out almost any careful activity, as long as he can be directed and instructed. JoT does not incur the standard -3 penalty for attempting a task while unskilled.

Leader: Motivating others in times of crisis or stress, particularly Non-Player Characters who might be reluctant to carry out an action.

Liaison: The art of negotiation and diplomacy. Opposed checks can resolve cases when two diplomats are engaged in negotiations.

Loader: Operation and control of all cargo loading devices, everything from fork-lift trucks to cranes, augmented exoframe loaders and all forms of starship loading equipment.

Mechanical: Operating and repairing mechanical devices, from truck engines to airlock doors, hydraulic lifters to life support machinery.

Medical: Training and skill in the medical arts and sciences, from diagnosis and triage to surgery and other corrective treatments. This skill represents a character's ability to provide emergency care, short term care, long-term care, and specialized treatment for diseases, poisons and debilitating injuries.

Mining: The character has experience and training in prospecting and mining, both on a world surface and in a zero-G environment. It includes the use of mining equipment and machinery.

Navigation: Plotting courses on planets, and in space and using instruments, maps and beacons to determine exact location.

Pilot: Operation and control of interplanetary and interstellar spacecraft.

Recon: Scouting out dangers and spotting threats, ambushes, booby traps, unusual objects or out of place people. Characters are also adept at silent movement and in camouflage techniques.

Security: Installing and also bypassing or dismantling security measures, from mechanical locks to swipe-card locks, keypad locks, surveillance cameras and various types of alarms and their triggers.

Steward: The care and serving of passengers and other guests and including customer service.

Streetwise: Familiarity with underworld society, its rules, personalities, groups and customs.

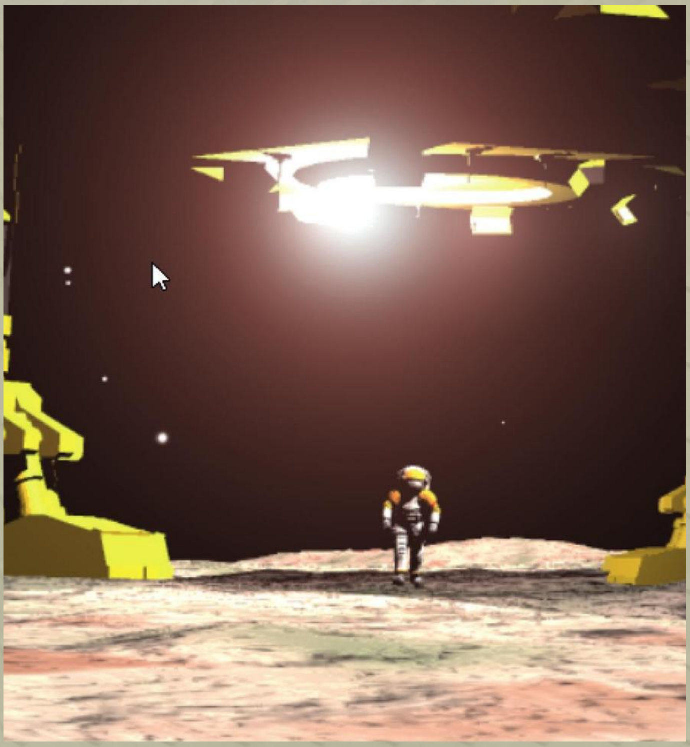
Survival: Staying alive in the wild, including hunting or trapping animals, avoiding exposure, locating sources of food and fresh water, producing fires, finding shelter, avoiding dangerous flora and fauna and dealing with the dangers of hazardous climates (arctic, desert, etc.).

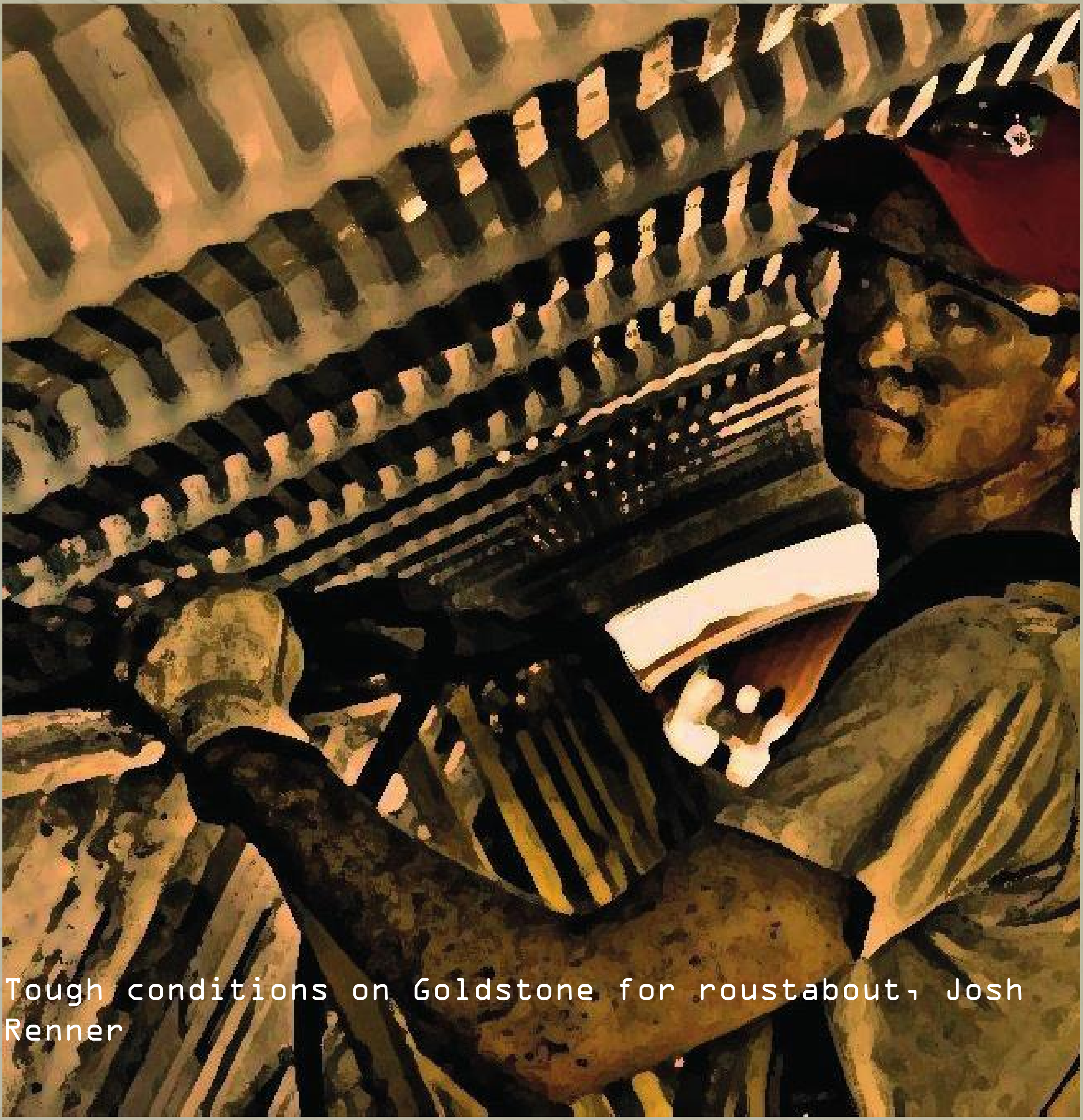
Tactics: This skill covers provides an initiative bonus in combat and can be used to understand the behaviour of an enemy unit. It also provides an insight on defensive, ambush or observation positions.

Vacc Suit: Use and training in all types of vacuum suits, hostile environment suits and combat armour, as well as operating in a zero-G environment.

Vehicle (Cascade Skill): The various specialties of this skill cover different types of planetary transportation. When this skill is received, the character must immediately select one of the following: Aircraft, Ground Vehicle or Watercraft.

Watercraft: Operation and control of ocean or water-going craft including motorboats, hydrofoils, hovercraft, submarines and large commercial ships.





Tough conditions on Goldstone for roustabout, Josh Renner

EQUIPMENT 6

The universe of HOSTILE is not ours; it conjures up a future imagined by film-makers and writers at the start of the 1980s. It is a future without wi-fi, without smart-phones and without touchscreen technology – it is a retro-future. As referee you might want to skip that and drop our modern 21st century technology right back in, and that is absolutely fine! But the equipment in this section works on the assumptions of this retro-setting.

The following section lists examples of common equipment that adventurers may want. Aside from armour and weapons, each listing notes the object's name and a basic description. An item with no weight or size given can be carried or worn without difficulty. Additional lines of explanation are given where considered necessary.

ARMOUR

Armour reduces the amount of damage a character takes from a hit, based on the type of armour worn. The armour rating for a set of armour is equal to the amount of damage reduced by the armour when you are hit in combat. A hit with Effect 6+ always inflicts at least one point of damage, regardless of the target's armour. Unless otherwise noted, only one type of armour can be worn at a time.

Armour Rating (AR)

The amount of damage reduced by the armour when an attack strikes the character.

Armour Type	Brand Leader	AR	Cost ($)	Wgt
Concealed Vest	Stern C Concealable Vest	4	500	1kg
Ballistic Vest	Stern B Ballistic Vest	5	450	2 kg
Rigid Armour Plate	Enforcer Rigid Plated Armour	9	3250	4kg
Combat Armour Suit	Hewison M5 Integrated Combat Suit	11	20,000	18kg
Vacc Suit (Hard)	Tharsis A38 Hard Suit	6	9000	9kg
Vacc Suit (Soft)	McConnell 456 Soft Suit	4	6000	12kg
Hostile Environment Suit	Tharsis H200 Hostile Environment Suit	8	18,000	40kg

Enforcer M21 Rigid Plated Armour: Enforcer Armaments Corporation produces ERPA or rigid plated armour that is made of a composite alloy shell - mainly titanium aluminide alloy over a layer of boron carbide resin fixed to a core of carbon-fibre. A Kevlar/Salar woven liner rounds off the protection. It comes in the form of a helmet; a full-torso, clamshell-style, rigid body shell; and a set of lower leg guards. The Enforcer M34 Helmet features microphone, tactical camera, slide-down protective visor and an integral Zenith PRC-45 short-range radio. This is exclusively military or paramilitary.

Hewison M5 Integrated Combat Suit: In environments where the warfighter requires complete environmental protection, then Hewison Industries offers the M5 Integrated Combat Suit. This full-body suit provides protection in vacuum, high or low temperature, against biological or chemical agents, in atmospheres that are unbreathable and against radiation typically found in a hard vacuum (decreasing exposure by up to 40 rads/hr). It can support a soldier for six hours much like a standard space suit, but the M5 is made of Kevlar and Salar woven layers sandwiching ceramic plates. Titanium-carbide plates reinforce vulnerable areas and these rigid sections are backed by carbon-fibre. To reduce radar signature, the suit is coated with radar-absorbent neoprene polymer impregnated with conductive carbon black particles. The suit includes a Zenith PRC-45 radio, multi-beam flashlight, tethers and equipment pockets, TapTint™ anti-flash visor technology and thermal masking. This last feature provides the infantryman with a modicum of stealth against infra-red sensor devices: heat is sunk into a chill can which must be replaced after one-hour of use. The M5 is exclusively frontline military.

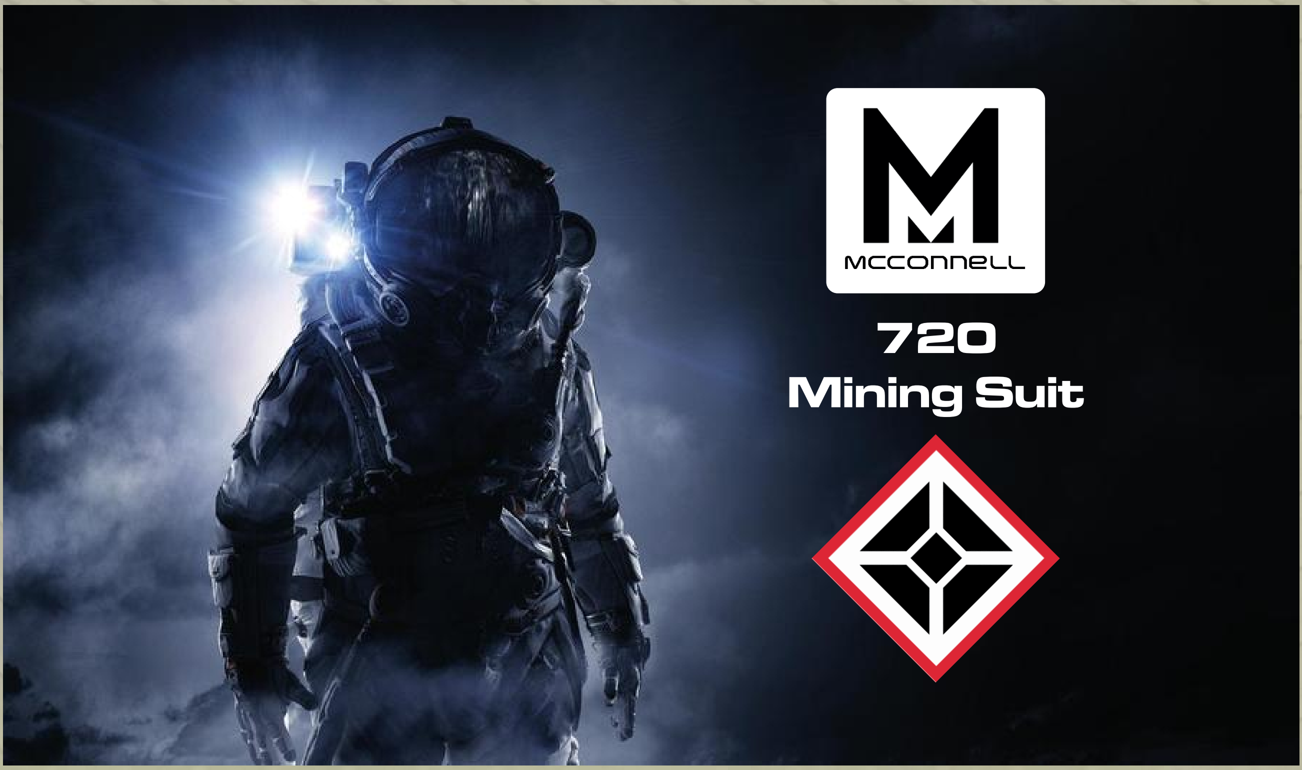
McConnell 456 Soft Suit: The soft vacc suit can be used in a vacuum, but to prevent ballooning, the air pressure must be reduced. This requires wearers to have spent some hours prior to the EVA pre-breathing oxygen. Because of this, hard suits are instead routinely used for work in a vacuum or near vacuum. Soft suits, meanwhile, are used on planetary surfaces for protection against low pressures, radiation (decreasing exposure by up to 20 rads/hr), cold temperatures and unbreathable atmospheres. The suit has a duration of six hours.

Stern B Ballistic Vest: This tactical vest protects the torso, and is worn over clothing. Made of woven Salar and Kevlar ballistic cloths, with hardened light-weight K-type ceramic inserts, the vest is good for protection against low-calibre rounds and high-velocity fragmentation. In a variety of colours, or camo patterns. Includes lots of pockets for carrying ammo and equipment.

Stern C Concealable Vest: A light-weight soft ballistic vest for the torso made of impact resistant Salar and Kevlar fibres. The fabric absorbs impact energy and spreads it over the torso, which can result in bruising. It can be effectively concealed under normal clothing although observers making an Int check at 8+ will notice something unusual.

Tharsis A38 Hard Suit: The hard vacc suit is the spacer's best friend, providing life support and protection when in space. The suit provides a breathable atmosphere and protection from the extremes of temperature, low pressure and radiation typically found in a hard vacuum (decreasing exposure by up to 40 rads/hr), for six hours. Hard suits are rigid and have segmented joints for freedom of movement, they can operate at high pressures which means wearers do not need to pre-breathe oxygen before use.

Tharsis H200 Hostile Environment Suit: Hostile environment suits are designed for conditions where a normal vacc suit would be insufficient, such as deep underwater, worlds shrouded in toxic or corrosive gases, extremes of radiation or temperature, or other locales that offer serious physical danger as well as the lack of a breathable atmosphere. HES suits provide all the life support offered by a normal vacc suit (for six hours) but are also impervious to flames, intense radiation such as that found at nuclear blast sites (decreasing radiation exposure by 90 rads/hr), and high pressure environments like undersea trenches.



CLOTHING

What do you wear in the future? Out amongst the Off-World Colonies, the mining outposts, the commercial starships and the space stations, the world of the future is a world of work. Airforce-style flight suits are the norm on board ship, one-piece work-suits made of fireproof Nomex, covered in zippered pockets for stowing checklists, flight-plans, tools and equipment. These suits sport the crew patch and the company logo. Jackets, equally blessed with pockets and equipment loops, are provided. For times when the crew are off-duty, cargo pants and short-sleeved shirts are provided by the Company. They even offer baseball caps decorated with the ship's own 'mission patch'. But - you're a long way from base, and you can mix and match if you like. Want to wear the jacket onboard? Want to wear your off-duty gear while manning your workstation? Well, how strict is your captain?

For miners, similar rules apply. Being shipped everywhere in a hypersleep chamber means that your baggage allowance is a pittance, you can forget a row of suitcases – most of your clothing will be provided by the Company, even for your off-duty time. Perhaps you can squeeze in a Hawaiian shirt or a muscle top, maybe some fancy boots or a Stetson… but you're a Company man in Company territory. It's the same for the Marshals, the management, the office staff… you're on the job. Don't forget it. Many companies dish out colour-coded clothing to assist in recognition, increasing performance and helping to maintain safety regulations; it's worked for the deck crews of US aircraft carriers for decades. Typically, blue work-suits are worn by maintenance personnel and orange by miners, whilst drivers and equipment operators wear red; management and admin often wear white. A suit and tie is a rare thing, most often seen on the Off-World Colony bases, where dramatic board meetings occur to discuss gains and losses in the order of millions of dollars.

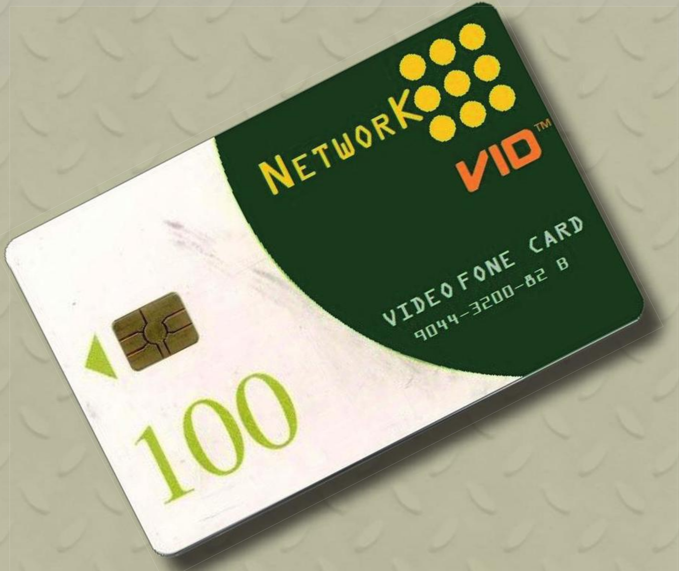
Earth and the colonies are slightly different, here we have established settlements, and those with hundreds of thousands or even millions of inhabitants, will see the typical diversity in clothing that we see here on Earth. It is out on the edges of those settlements, in the deserts and on planets with only a few hundred brave settlers, that the colonists revert to work-wear. Work-suits are worn on all of the smaller colonial projects, along with baseball caps, jackets and cargo pants – it is , after all, utilitarian and useful clothing.

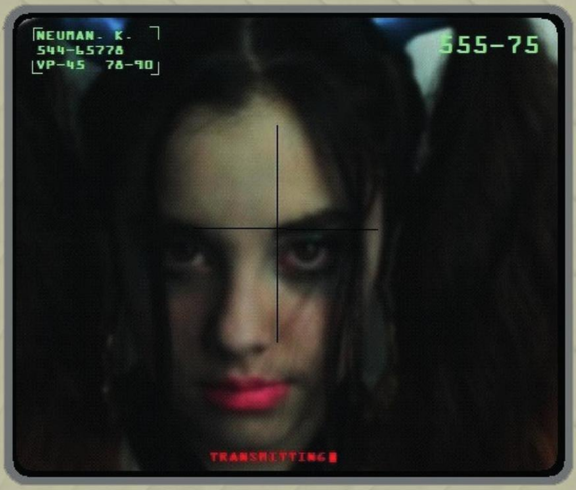
Let's not forget footwear. When mining or on EVA, of course, the vacc suits have their own integral footwear. For tramping around an outpost, mine, station or starship then all you need are those Company shoes: probably Converse with ruggedized soles, or perhaps Reebok Stompers or some other type of Off-World sneaker. Marines of course need military boots, and it is not surprising that many other units and organizations equip their employees with similar footwear. US Marines issue their troops with either M3 Jungle Boots (featuring olive fabric sides, and drain holes through the black leather uppers) or the famous SSG Commando Tactical boot which has proven so popular throughout the Outer Rim with both security forces and established military units.

COMMUNICATORS

In **HOSTILE**, the revolution in communications wasn't the cellphone, but the videophone. There are videophones in cars, on office desks, in bars and clubs, railway stations and airports, space stations, starship corridors and apartments. And of course they exist in public phone booths, too. But don't think that these phones are all simply dial-and-talk interfaces, most can also accept data cards. Some of these are business cards that, when slotted into the phone, ring the employee at the business automatically.

Fone cards are more commonly used by individuals to store all of their encrypted personal details, very much like a modern-day SIM (Subscriber Identity Module) card. A person slots their fone card into the video phone and this brings up a menu on screen of that person's contact list and their numbers, which the phone can then dial. Included on the data card is an electronic diary. These fone cards can be slotted into a bank terminal and topped up with funds.





Communicator	Brand Leader	Cost	Wgt	Range
Uplink Radio	Zenith ZLR Uplink Transmitter	$4000	10 kg	Orbit
Long Range Radio	CRM 150 Base Station Transmitter	$2000	8 kg	500 km
Medium Range Radio	Aztec AA-2 Field Radio	$1000	3 kg	50 km
Short Range Radio	Gulfstar 20 Hand Radio	$250	500g	10 km
Headset	Gulfstar HeadSet	$100	100g	--
Video-Phone	Comlink America VID Video-Fone	$600	2 kg	--

Zenith ZLR Uplink Transmitter: Pack-mounted, tight-beam transmitter capable of contact with ships in orbit. The transmitter must be emplaced on its tripod before it can be utilized and details of the ship's orbit must be available to the landing party. The ship must be above the horizon for the link to be established, on most worlds this will be roughly one-third of the time. High orbits allow longer transmission times, but consequently longer periods of time when the ship is on the other side of the planet, below the horizon.

CRM 150 Base Station Transmitter: A long-distance radio suited more for vehicle or ground station use. It is capable of up to 200 km range and has five separate channels.

Aztec AA-2 Field Radio: Belt-carried or pack-mounted radio set capable of up to 50 km range, and contact with official radio channels. It has five separate channels.

Gulfstar 20 Hand Radio: Hand-held radio capable of 10 km range (much shorter underground or underwater).

Gulfstar Headset: A headset with boom mike and coil cable that jacks into any of the radios to allow hands free, voice-activated, communication.

Comlink America VID Video-Fone: A desktop videophone with keypad, card-reader and colour screen. Identical units can be found in cars and taxis.

COMPUTERS

Fitting the retro-tech setting of **HOSTILE**, computing more resembles the systems of the late 1980s than those of the early 21st century. Key differences are a lack of wi-fi cable-less technology and the absence of ultra-miniaturization of computing. There are no palm computers or smart phones and touch screen technology does not exist. None of this means to say the computers in 2225 are not powerful and versatile machines, it's just that they have a number of minor limitations which we in the twenty-teens, are no longer familiar with. Forget full-colour LCD or plasma screens, too, the cathode-ray tube (CRT) monitors in **HOSTILE** are monochrome, typically green, although amber, blue and even white displays are in use (the actual colour depends on the type of phosphor being used to create the display.

Mainframes are a big-business standard. Corporations use mainframes, as do starships. These powerful computers are supported by a wired network that can be accessed via one or more workstations. Each workstation resembles a modern personal computer (PC), with keyboard and cathode-ray tube monitor (CRT). Mainframes weigh around 100 kg and are usually fitted into a small purpose-built computer room with one or more terminals (see below). Use the computers listed in the Starship Construction chapter.

Workstations are used to provide outputs from the mainframe and to allow access to its capabilities. Workstations are often used in factories, on colonies and on board starships and space-stations. Used to access a mainframe, the workstation has a rating of Model/0 (it does not run its own programs). Workstations, however, can also be stand-alone computers, much like modern-day PCs. They have integral processors and memory hard drives with their own dedicated software. Workstations in some installations or businesses will often be connected to one another via a wired network and can be rated as a Model/1 to a Model/4. A workstation weighs around 10kg (without chair and console unit) and costs $250.

Workstation Model	Brand Leader	Cost ($)
Model/0	Aztec 001 Terminal	250
Model/1	CRM Basic	250
Model/2	IBN Professional Series 9	500
Model/3	Hosaka Farstar 200	1,000
Model/4	IBN Professional Series 12	1500

Terminal Model	Computer Name	Cost ($)
Model/1	CMD ZX-22	300
Model/2	IBN Netspace 3	700
Model/3	Hosaka Goldstar	2,000
Model/4	Aztec-Sendai Cyberspace 64	5,000

Portable terminals are available; these stand-alone computers resemble modern laptops with hinged cases and often run dedicated software; however they must be connected to the hardware they control via a cable. Controls for complex field equipment require these dedicated laptops, often supplied in tough, anti-shock cases with integral carry handles. Portable terminals like this are supplied with remote sentry guns, uplink transmitters, portable radars and drones - amongst other things. Portable terminals weigh 5 kg and are rated from Model/1 to Model/4.

Data Cards are the main method of mobile information storage and resemble modern-day smart cards. A data card resembles a credit card in size and shape but it is more than a piece of plastic. The inside of a data card contains an embedded microprocessor. Data cards may have up to 1 gigabyte of RAM as well as a 16-bit microprocessor; they use a serial interface and receive their power from the card reader they are currently connected to. Their weight is negligible and their cost is $5 each.

Optical Discs are used as a more powerful file storage platform and are also the central format for playing media (video and audio). The standard Baumann GmbH MiniDisk series holds up to 15.9 gigabytes of data and each glass disc is permanently mounted within a small, rectangular plastic case. The disc itself can withstand extreme temperatures and pressures and is predicted to hold its data internally for millennia. Their weight is negligible and their cost is $15 each.

Disc Player: A portable unit with flip-up colour screen which can play MiniDisks. It incorporates built-in speakers and a storage area within the case for up to twenty Baumann MiniDisks. Although most Portable Terminals have MiniDisk readers, they are only able to read *data* from the discs and do not have the capability to play video or audio. For that the character will require a dedicated Disc Player with its colour screen capabilities. Weight is 2 kg and cost is $250.

BAUMANN
80
15.9 GB

PASS-Card: Most governments issue a single data ID card that serves many purposes, similar to the modern-day ID card that was introduced by the Malaysian government in 2001. This mandatory American ID card (known as the 'PASS' card) includes fingerprint, retina print and photo information, as well as name and government registration number. For those who drive it includes driving license details and may also include health and insurance information. The American PASS Card also serves as a banking card, since financial institutions can rely on its security algorithms. Use it as a bank debit card at ATMs, or, if you work Off-World frequently, as a stored-currency card. Load the PASS-Card with dollars before you travel, then have them available to pay for goods and services at your colony destination or mining outpost. The modern United States Navy operates a similar system today, called the 'Navy Cash' scheme. Extra funds can always be ordered via the hyperspace relay Network, and when they have arrived (at the speed of communication) the user will be automatically called by video-fone and an on screen alert will prompt him to insert his data card to add the transferred funds to the card. Lost cards can be cancelled with a single video-fone call and a new one will be dispatched. If the owner is on some lonely colony world, the government there can supply a temporary card, with registration and ID details as well as a basic currency balance. Weight is negligible and replacement cost is $100.

The Data Network: Working in an orbital hab, an outpost or in the science bay of a starship, a character will have access to a Local Area Network (LAN) which constantly monitors machinery, environmental readings and subsystems using telemetry – things like ATVs, vacc suits and drones – all in real time. Of course the LAN also features extensive memory files and scientific software, but it is mainly concerned with monitoring and controlling a complex piece of machinery. Some corporations and other organisations run their own LANs known as intranets, closed systems that allow access to wider nets only through established data gateways.

A data network exists in 2225 that not only covers the entire Earth, but stations throughout the Solar System and all of the Off-World Colonies and outposts as far as the Outer Rim. It exists where communication exists, data piggy-backing on com-lines to allow computers to transfer data and to communicate with one another. Today we call this the Internet, in **HOSTILE** it is known as the Integrated Data Network (IDN, or simply, 'Network'). Because communication is greatly delayed by the great interplanetary and interstellar distances involved, the Network employs a new set of protocols and technologies that are tolerant to large delays and errors. Data requiring transfer is bundled, stored and then forwarded and this means that instantaneous net usage is impossible. The Network across the Solar System is broken up into separate Planetary Area Networks (PANs), such as Earth-Net, Titan-Net and so on. Likewise, the separate interstellar colony and outpost worlds have their own PANs (such as Hiroshima-Net). The huge communication time lag between worlds effectively closes these PANs off from one another and communication between them is effectively via text, voice or video email, forwarded data transfer packets and bulletins.

COMPUTER SOFTWARE

SOFTWARE	Rating	Cost ($)	Description
DNA Database	1	1,000	Full DNA listing of a colony's population (restricted).
Criminal Record Database	1	2,000	Complete and detailed listing of criminal records (restricted).
Census Database	1	500	A nation's census details from 1945 to 2225.
Vehicle Registration Database	1	2000	Current database of vehicle owners, registrations and vehicle types (restricted).
Graphic Design	2	1000	A 3D graphic design package used to layout and virtually test electrical or mechanical devices, machines, vehicles or buildings.
Image Editor	1	600	Used to modify, retouch or simply create images digitally. Able to scan into the computer, analyze and modify.
Predictive Modelling	3	3000	This software is able to create complex and immersive data models that will be displayed on single colour monitors. Such models might include the activities of a volcano, the spread of a disease, the learning abilities of a rogue AI or the effects of virus etc.
Audio/Visual Analysis	1	900	Sound or video data input from a data card or optical disc can be studied, investigated, scrutinized and isolated in order to find clues or look for evidence.
Translator	1	100	Translators are specialized Expert systems that only have language skills. Near-real-time translation.
	2	1000	Works in real-time and has a much better understanding of the nuances of language.
Voice-Activated Interface	1	100	Simple artificial intelligence allows voice control and displays data intelligently. Required for using Expert programs.
Expert Skill Base	1 2 3	1000 10000 100,000	Expert programs are interactive skill databases, able to provide intelligent solutions to problems on the fly. A character using an expert system may make a skill check as if he had the skill at the program's Rating –1. The following skills are Expert capable: Comms, Electronics, Mechanical, Medical, Security, Administration and, if run by an android or robot, Ground Vehicle and Hovercar.
Intellect Control	1	2000	Intellect Control allows machinery to use Expert systems. For example, a robot doctor might be running Intellect Control/1 and Expert Skill Medic/3, giving it a Medic skill of 2. An Intellect Control program can use a number of skills simultaneously equal to its Rating.

A character can use any high-rating software at a lower rating, to a minimum of the lowest rating shown. Programs above Rating/1 cannot be copied easily, as they require a non-trivial amount of bandwidth to transfer.

MEDICINE

Medicine in 2225 is very advanced. When a patient requires a new liver, arm, eye, lung etc., it is force-grown in a lab using a test cell sample from the victim, or more commonly for the average worker - taken from one of many organ banks. This is done within a week. Cosmetic surgery (face changes, etc.) is available, costing $5,000 that will enhance a person's appearance. Further operations can totally disguise a character's identity. Designer drugs are also detailed further on in this section. Full-body reconstruction is also possible. A totally wrecked body with an intact brain can be reconstructed and rebuilt. The brain must first be salvageable. The full reconstruction takes place over several months and involves buying new organs, and growing fresh skin. The patient may end up looking totally different. Cost: $600,000.

The world of **HOSTILE** is a pharmacological treasure-trove. Drugs can be easily separated into the medical and the designer. Yet many cutting-edge medicinal drugs come with a hefty price tag, and in Earth-bound city-based games they are bought and sold on the black market.

Drug	Cost ($)
ACE Inhibitor	100
Aspedine	300
Benzoditropolene:	600
Betaseratonin	400
Delta-14	700
Dexamphetamine	200
Korteline	400
Lysophosphatidic Acid	300
Medical Drug – Grade 1	200
Medical Drug – Grade 2	800
Medical Drug – Grade 3	2,000
Pheromone-X	400
Polydichloric Euthimal	500
Polypheronol-Z	1000
Synthetic Endorphin Analog	300
Virax-B	200

Medical Drugs

Various medical drugs are being manufactured. Some have an in-game use - others are useful only as black-market commodities, stolen or fenced by hustlers and dealers. These drugs often originate from the Chiba clinics in Tokyo. Use the list of 'trade' drugs below to give your black-market deals Gibsonesque realism. The drugs that follow fetch just as high a price in 2225 as heroin does today. Assume three quality or rarity grades, 1, 2 & 3, with prices of $200, $800 and $2,000 respectively. Each dose is carried within a vacuum sealed phial packed into a foam-filled box that mounts 6 phials each.

- Aminoglycosides (antibiotic)
- Antimetabolites (anti-cancer)
- Cotrimoxozole (antibacterial)
- Corticosteroids (immunosuppressants)
- Cytotoxic Antibiotics (anti-cancer)
- Idoxuridine (antiviral)
- Sulphacetamide (antibacterial)
- Sympathomimetic (neurotransmitter stimulant)
- Synthetic Thyroxine (thyroid imbalances)
- Tetracyclines (antibiotic)

There are more useful drugs available for the player characters. The person administering the drug must make a Routine (+2) Medicine skill roll or less for successful use of the drug. Failure means a problem, commonly the drug wears off way too quickly, is a weaker form and does not work properly, or, if there is a side effect, will trigger it.

Aspedine: Prevents intoxication via alcohol, useful on missions where social drinking must take place. After such a night, most people will be at -3 on all actions. Aspedine ensures a character stays fully alert. Cost $300.

Benzoditropolene: This is a universal anti-toxin, that is effective against most poisons and nerve agents. On a 2D6 roll of 10+ it may even work against a more obscure poison. Works within one minute, arresting the poison's effects. Recovery then begins as normal. Cost $600.

Korteline: High energy drug allowing an 8-hour sleep period to be missed without the usual -3 penalty. A potential side effect is a deep depression (-1 all actions and an inability to put oneself at risk) for 1D3 hours following that time. Cost $400.

Lysophosphatidic Acid (LPA): Must be administered before or immediately after (within ten minutes) suffering a period of radiation exposure. It absorbs up to 100 rads per dose. A character may only use LPA once per day – taking any more causes permanent Endurance damage of 1 point per dose. Cost $300.

Polypheronol-Z: Polypheronol-Z: is a hallucinogenic drug that drowns the patient in pretty colours, emotional warmth and psychedelic trips. It was created by Haruna Biolabs in Chiba City to enable psycho-surgeons to unravel a patient's deep-rooted problems. The drug has recently been used by corporate snatch squads as a truth serum. A single dose will result in one hour of 'truth' (often garbled with an awful lot of crap) as the patient talks in his post-hypnotic, auto-suggestive state of mind. This is followed by 1-6 hours of unconsciousness. One effective method of gaming the use of this drug is to not tell the player what is been injected and then keep him separate from the other players. As he hallucinates, feed him a completely fabricated version of events, allow him to run around, try and escape, and more importantly, interact with his interrogators. Everything said verbally really occurs, all the rest is hallucinated. Usually the player will give away lots of clues during his 'virtual freedom'. When it wears off he will realize he is still strapped to a chair full of Polypherenol-Z. A dose of PPZ costs $800.

Designer Drugs

When the game scrapes the bottom of the human barrel and deals with drug dealers on distant mining outposts, or deadly deals on the streets of Chiba City in Tokyo, where the cutting edge drugs are produced – the referee will need some designer drugs. These are tailored, lab-produced drugs with a specific intended effect. Many of these designer drugs are addictive and popular on the street. When a character takes a drug, he should make a Routine (+2) Medical roll or suffer a side-effect. This may trigger an addiction. See the individual drug descriptions for more information.

Angiotensin-Converting Enzyme Inhibitor ('ACE'): This vasodilator drug is can be taken as a tablet and opens up the blood vessels giving a sudden rush of physical energy and a rapid high. The effect lasts for half an hour, giving the PC +1 on any physical action or social task. Side effect is a bout of nausea, dizziness (-2 all actions) lasting for an hour that takes effect instead of the high. If an Easy (+4) Endurance roll is then failed, the character also blacks-out and suffers 1D6 damage. $100.

Betaseratonin ('Smart Drug'): This gives the user +1 on his technical or highly mental skills for 1-3 hours. The side effect is 'neuron misfire': the character is in a trance. Once a side effect is triggered, the character must make an Average Endurance roll to avoid having the side effect occur on a daily basis at random times (this random side effect is avoidable only if a dose of smart drug is taken at the start of that day – ie. It is very addictive!).Cost $400.

Delta-14: Chemical warfare toxin causing 2D6 damage if an Average (0) Endurance roll is made and causing death if failed. The time it takes varies with delivery method but an aerosol delivery typically works within 1-3 combat rounds. $700.

Dexamphetamine ('Speed' or 'Dex'): This amphetamine, a central nervous stimulant, provides a tremendous neuro-physical boost and comes as a small pink octagonal tablet. Gain +2 to carry out any act or task that does not require calm, careful concentration; this may include athletic moves, combat or kicking down a door for example. It lasts half an hour. No concentration is allowed. The side effect is a 'high' that lasts only 5 minutes followed by a bout of nervous exhaustion (all actions at -2) for a couple of hours. Once a side effect is triggered, the character must make an Average Endurance roll to avoid having the side effect occur on a daily basis at random times (this random side effect is avoidable only if a dose of social drug is taken at the start of that day). Cost $200

Pheromone-X ('Social Drug'): This is a mood relaxant that gives +1 to all social skills for 1-3 hours, those skills that generally involve personal interaction. The side effect is dulled senses and tiredness (-3 on all hearing and vision rolls). Once a side effect is triggered, the character must make an Average Endurance roll to avoid having the side effect occur on a daily basis at random times (this random side effect is avoidable only if a dose of social drug is taken at the start of that day – ie. It is very addictive!). $50.

Polydichloric Euthimal ('PDE'): This mix of cocaine and meperidine is a central nervous drug that is used to boost physical performance. It gives the character +2 on any hand-to-hand combat and physical actions, and cancels out all penalties from wounds sustained as well potential unconsciousness. A character using the drug in combat adds +8 to his initiative total at the start of combat (or whenever the drug takes effect). The user becomes cold-blooded with no chance of success in his social skills. The side effect of PDE is catatonic fear, during which the character cowers in fear or behaves suicidally. The drug (or its side effect) lasts for one hour. Once a side effect is triggered, the character must make an Average Endurance roll to avoid having the side effect occur on a daily basis at random times (this random side effect is avoidable only if PDE is taken at the start of that day – ie. It is very addictive!). Cost $500.

Synthetic Endorphin Analog ('Endorphin', 'Dorph'): This pain inhibitor cancels *any* penalties suffered from wounds as well as shrugging of unconsciousness for up to 1 hour. It can be taken as a precaution. The 'dorph's' side effect is a one hour nervous attack instead of the drug's effects. This gives the player character -1 on all physical actions. Once a side effect is triggered, the character must make an Average Endurance roll to avoid having the side effect occur on a daily basis at random times (this random side effect is avoidable only if a dose of endorphin is taken at the start of that day – ie. It is very addictive!). Cost $300.

Virax-B: A tranquilizer inducing paralysis. Victim rolls Average (0) Endurance or is paralysed in 1 round for 2D6 minutes. A *successful* roll means instead slowness and clumsiness (-2 on actions) for 2D6 mins. Cost $200.

EXPLOSIVES

The Demolitions skill is used with explosives – the Effect of the Demolitions skill check multiplies the damage, with a minimum of x1 damage for an Effect of 0 or 1. Explosives are not legally available on any world with a Law Level of 1 or greater.

Nortinghouse M-450 TACFORZ Charge: This US military demolition charge can be used to blow holes in mountains and destroy large, immobile constructions. It is equal in power to 20 tons of TNT and gives military engineers the ultimate tool for moving, destroying or clearing obstacles in the path of the US warfighter. It is supplied in a card-locked, impact resistant case which can be strapped to a soldier's back. Cost $120,000. Weight 20 kg.

Stern C-4 Plastic Explosive: This generic, multi-purpose plastic explosive is a favorite of military units, terrorists, demolition teams and adventurers across known space.

Weapon	**Brand Leader**	**Damage**	Radius	Cost ($)
Plastic	Stern C-4 Plastic Explosive	3D6	2D6 metre	200
Nuclear Demolition Charge	Nortinghouse M-450 TACFORZ Charge	2D6 x 20 2D6 x 100 rads	160 metres	120,000

PERSONAL DEVICES

Characters often possess any of a number of personal devices.

Device	**Brand Leader**	**Cost ($)**	**Wgt**
Binoculars	Zenith CF Falcon Binoculars	300	1kg
Camera	Sony Matrix DD1018 Digital Camera	500	1kg
Compass	ARMI Magnetic Compass	20	--
E-Board	Memex E-Board	250	2kg
Electronic Scanner	Novomo Pro-Series EM Scanner	450	200g
Flashlight	Norden LSGS Flashlight	120	1kg
Head Torch	Norden LSAA Head-torch	70	200g
Inertial Locator	Gulfstar INS44 Inertial Nav System	1000	1.5kg
Locator Beacon	Gulfstar PLB2 Personal Locator Beacon	100	--
Metal Detector	Aldine Metal Detector	550	2kg
Motion Tracker	IE J34 Motion Tracker	1680	1kg
Night-Vision Goggles	Reiner-Gama 101 Night-Vision Goggles	500	200g
Radiation Detector	Aldine ARB Radiation Badge	50	--
Wrist Watch	Seiko 234-501 Pulsemeter Wrist Watch	200	--

Aldine ARB Radiation Badge: Indicates presence and intensity of radioactivity within a 30-meter radius. The indicating signal will grow stronger as it gets closer to the source. Cost $50. Weight negl.

Aldine Metal Detector: Indicates presence of metal within a 3 meter radius (including underground), with the indicating signal growing stronger as it gets closer to the source. Cost $550. Weight 2kg.

ARMI Magnetic Compass: Indicates direction of magnetic north, if any exists. Cost $20. Weight negl.

Gulfstar INS44 Inertial Nav System: A hand-held or belt-mounted device which indicates direction and distance traveled from the starting location, usually imaging directly in to a preloaded map set for precision navigation. Cost $1,000. Weight 1.5kg.

Gulfstar PLB2 Personal Locator Beacon: A wrist-mounted emergency beacon with a range (once activated) of up to 10 km. The PLB uses a standard emergency frequency which can be tracked by any modern avionics system, or either a Gulfstar Hand Radio or a Novomo EM Scanner. The signal will last for 24 hours. Cost $100. Weight negl.

IE J34 Motion Tracker: The Inferno Electronics J34 Motion Tracker is a hand-held unit with a simple shoulder-strap that uses discriminatory Doppler shift ultra-sound scanning to detect movement within a 100 degree cone ahead of the operator. Range varies, from 10-20m indoors to almost 600-800m in open country. They are useful tools, but subject to varied limitations, anything that moves can show up on the reading if not properly tuned out, extremely slow-moving objects may not show up at all, and of course any enemy listening in will probably detect the loud ultra-sound bursts being emitted from the J34.

To operate a motion tracker, the referee makes an Average Comms roll on the player's behalf. With a success he can give the player a pretty accurate indication of what the scanner is picking up; if unsuccessful, then he should give the player false data. Player involvement can be increased by letting he or she roll ***one*** of the 2D6, with the referee rolling the other in secret. Cost: $1680. Weight 1kg.

Novomo Pro-Series EM Scanner: This device detects the electromagnetic emissions of technological devices, and can be used as a diagnostic tool when examining equipment (+1 DM to work out what's wrong with it) or when searching for hidden bugs or devices. The Comms skill can be used to sweep a room for bugs. Cost $450. Weight 200g.

Norden LSGS Flashlight: A waterproof and impact resistant flashlight, roughly 20 cm in length, with an endurance of 6 hours. A flashlight produces a wide cone of light up to 18 metre long with a radius of 6 metre at the end of the beam. Cost $120. Weight 1kg.

Norden LSAA Head-torch: A powerful little head-torch, its use allows for illumination with hands-free. Cost $70. Weight 200g.

Memex E-Board: Clipboard-sized, hand-held Model/0 terminal running administration and record-keeping software. It has a monochromatic screen with an in-built stylus. The memex is rugged, and it features a data card slot and a spring-loaded jack cable for plugging into any videofone unit that enables it to access the Network Cost$250. Weight 2kg.

Reiner-Gama 101 Night-Vision Goggles: These unobtrusive goggles allow good vision in near total darkness, as long as there is some starlight or other ambient light to enhance. Cost $500. Weight 200g.

Sony Matrix DD1018 Digital Camera: A hand-held digital camera capable of still photography as well as video. It is capable of low-light photography, and includes an in-built timer. The camera can take 300 still shots, or up to two hours of video. It can be plugged directly into any computer for the download of images and video. Cost $500. Weight 1kg.

Seiko 234-501 Pulsemeter Wrist Watch: Allows the user to tell the local time but it can also be configured to multiple worlds, as well as standard time, and allows the user to configure alarms based on specific times. The wristwatch has a stopwatch feature as well as a life signs monitor function. It is digital. Cost $200. Weight negl.

Zenith CF Falcon Binoculars: These high-tech binoculars feature low-light night-vision and a laser range-finder. Cost $300. Weight 1kg.

ROBOTS AND DRONES

This section describes the robots and drones that exist within the **HOSTILE** setting. Whereas drones are often used to supplement human activity, robots are not so commonly employed. Autodocs are common in every starship medbay, but not all ships carry repair robots with them. Where the need for a robotic presence is clearly felt, then many operators purchase (if they can afford it) an android. Androids are human-looking robots that are used in small numbers, since social stigma and expense precludes more universal use. At all times it must be remembered that **HOSTILE** is a roleplaying game, about playing the roles of characters that are challenged by adversity and isolation. For humans to overly rely on robots and androids takes away some of that adversity – in **HOSTILE** it is characters who make the difference, who have the skills and who brave the odds. The android might just be too inflexible, too narrow-minded - and too expensive - to risk!

A robot has an Intellect program running, allowing it to make decisions independently, whilst drones are remote-controlled by a character with the Comms skill. Robots and drones operate in combat like human characters but take damage as if they were vehicles. They have Hull and Structure characteristics instead of Endurance characteristic, and an Endurance DM of 0. Any robot running an Intellect program has an Intelligence and Education score. Drones have neither. A robot's Education characteristic is representative of the information programmed into it and even low-end robots can have high Education scores. Most robots have Social Standing characteristics of 0 as they are not social creations but there are some exceptions, usually high-end models running advanced Intellect programs. Drones do not have Social Standing.

Robot	Brand Leader	Cost ($)	Wgt
Autodoc	HN-5900 Autodoc	100,000	1,000kg
Mobile Sentry Robot	M4 Trojan Sentry	230,000	500kg
Remote Sentry Robot	M3A2 Spartan Remote Sentry Gun	56,200	35kg
Repair Robot	Tharsis PAK-3	80,000	155kg
Security Robot	Shinobi 08 Junior	90,000	140kg
Farm Robot	TDC Parkmaster	40,000	200kg

Drone	Brand Leader	Cost ($)	Wgt
Aerial Drone	ASA RQ-456 Blizzard	15,000	8kg
Aerial Combat Drone	Matsuyama MQ-6 Phantom	850,000	7,500kg
Mining Drone	HS900L Excavator	200,000	10,000kg
Probe Drone	Aerodyne CLU Surveyor	40,000	800kg

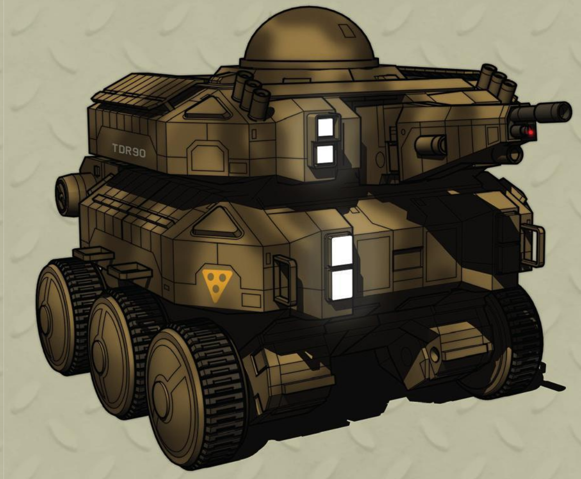
ROBOTS

Drones are remotely controlled pieces of equipment that require a human operator with Comms skill. Drones are more commonly employed in the **HOSTILE** setting than robots. Robots typically have Model/1 computers and run the software: Intellect 1 and Expert skill (whatever is needed) 1; this gives them limited Intelligence and Education. Most robots have been designed around a piece of technology: a fabrication tool, an extendable arm, a thermal imager for rescue work, a light machinegun and sensor pod for security work etc. Finally, there are androids - complex and expensive humanoid robots capable of high-end thinking and problem solving. Robots and drones operate in combat like human characters but take damage as if they were vehicles. They have Hull and Structure characteristics instead of Endurance characteristic. Nearly all robots move either using tracks or wheels. For many, 'walking' speed is 6m per round, but most can also achieve 24m per round in pursuit or emergency. Use the drone or robots Hull and Structure values as if they were vehicles.

Mobile Sentry Robot: The **US M4 Trojan Mobile Sentry** is a semi-autonomous armoured gun robot, fitted with four rugged wheels and an armoured hull. A 9mmHE Hydra smartgun is mounted within an upper turret, along with 5,000 rounds of ammunition. The Trojan can be programmed take on the monotonous task of perimeter surveillance and rapid-reaction, patrolling a set area, and firing on any target unable to show an IFF transponder. Or the 'gun drone' can be manually controlled via a ruggedized CMD ZX-22 that is supplied with the gun and can communicate with the M4 via radio-link. It also includes a hard-cased processor unit and integral turret-mounted sensors (an IFF system, camera, IR designator and IR thermograph). The Trojan can also issue audio alarms and challenges to trespassers, and has a turret-mounted floodlight for illumination.

The M4 has a top speed of 20kph and an endurance of 12 hours using its fuel-cell powerplant. The MSR weighs 500kg and is roughly chest height.

Stats: Strength 6, Dexterity 7, Intel 3, Education 3
Armour 12, **Hull** 2, **Structure** 2
Fittings: Hydra Machinegun (4D6+2, Long Range), Camera, Night-vision, Thermograph.
Software: Intellect 1, Heavy Weapons 1
Price: $230,000



Remote Sentry Robot: Sentry robots are designed to take on the monotonous task of static perimeter surveillance. The US **M3A2 Spartan Remote Sentry Gun** is built around a belt-fed Steyr-Brandt StG 340 8.85mm light machine gun and includes a hardcased processor unit, integral forward-facing sensors (an IFF system, camera, IR designator and IR thermograph) and is mounted via a motorized mount onto a rugged folding tripod. The weapon is supplied with 500 rounds. A CMD ZX-22 is supplied with the gun and can communicate with the M3A2 via radio-link. It can be used to alter settings (such as burst control, scanning parametre, firing range, and to monitor both rounds used and the temperature of the barrel). The software alerts the user with a 'critical' alarm when only 50 rounds remain. The system has an operating range of 1,000m and weighs 70kg (sentry gun, tripod and portable terminal all included).

Stats: Strength 3, Dexterity 3, Intel 3, Education 1
Armour 2, Hull 0, Structure 1
Fittings: Steyr-Brandt StG 340 Machinegun, Camera, Night-vision, Thermograph
Software: Intellect 1, Heavy Weapons 1
Price: $56,200

Security Robot: A small, tracked security robot for use on colonies, and particularly on corporate compounds and in high-security buildings. The **Shinobi 08 Junio**r is a typical example of these waist-high, tracked security robots. Junior weighs 140 kg and is powered by a rechargeable lithium-ion battery allowing for continuous operation for 24 hours (recharging in 4 hours).

Stats: Strength 6, Dexterity 5, Intel 5, Education 4
Armour 6, Hull 1, Structure 1
Fittings: Stun Gun with 10 shots, Forward-facing Sensor Pod with IFF system, Camera, Thermograph
Software: Intellect 1, Gun Combat 1
Price: $90,000

Farm Robot: A farming robot is used to tend crops on the surface of a planet. The agri robot is the size of a ride-on lawnmower, and has four rugged wheels for traction in soft soil. It carries a modular system at the rear, where hoppers of seed, fertilizer or pesticide can be swapped out as needed, or a plough, baler, scarifier or other tool can be fitted. It serves as an automated mini-tractor useful on start-up colony worlds with limited manpower. Several extendable farm tools are also mounted on the front. It cannot be used on starship or space station hydroponics or greenhouse installations. The **TDC Parkmaster 'Paco**' is a typical example of this type of colony robot. The Parkmaster weighs 200 kg and is powered by a rechargeable lithium-ion battery allowing for continuous operation for 48 hours (recharging in 6 hours). It has a standard walking speed of 6m per round.

Stats: Strength 8, Dexterity 5, Intel 4, Education 5
Armour 4, Hull 1, Structure 1
Fittings: Extendable Workarm, Seed Dispenser, Rotating set of Work Tools
Software: Intellect 1, Agriculture 1
Price: $40,000

Repair Robot: Shipboard repair robots are small machines that carry a variety of welding and cutting tools. The **Tharsis PAK-3** is a bi-pedal robot standing one meter tall with a forward facing equipment bay from which tools can unfold. Its small size allows it to reach nearly all parts of a facility or starship. Magnetic induction coils in the feet give it the ability to walk on the exterior of a spaceship and a folding wire cage on the back give it the ability to carry technical parts to and from the work site. The PAK-3 weighs 155 kg and is powered by a rechargeable lithium-ion battery allowing for continuous operation for 24 hours (recharging in 4 hours). It has a standard walking speed of 3m per round.

Stats: Strength 6, Dexterity 7, Intel 5, Education 6
Armour 6, **Hull** 1, **Structure** 1
Fittings: Mechanical toolkit, Extendable Workarm
Software: Intellect 1, Electronics 1, Mechanical 1
Price: $80,000

DRONES

Aerial Drone: A a flying drone used for local area surveying and surveillance operations. The **ASA RQ-456 Blizzard** is a ducted fan VTOL micro drone. Developed by the Applied Security Applications, it is suitable for backpack deployment and single-person operation. The Blizzard has an operating range of 10 kilometres, an endurance of 40 minutes, a service ceiling of 3,000 and can a speed of 30 kph. It is supplied with a controller, backpack carry-case and a ground support pack (all weighing 8 kg).

Stats: Strength 1, Dexterity 7
Armour 2, Hull 1, Structure 1
Fittings: Camera, Night-vision, Ground Mapping Radar, Microphone, Lidar, Thermograph
Price: $15,000

Aerial Combat Drone: A flying drone used by the military for air-to-ground strikes. The **Matsuyama MQ-6 Phantom** is a ducted turbofan VTOL 10 metre in length. The Phantom has an endurance of 18 hours, a service ceiling of 50,000 metre and has a speed of 750 kph. It has a 1.5 ton displacement which includes 4 M65 Gecko Multi-Purpose Missiles. The remote pilot control desk, and the com-link equipment for the MQ-6, weighs 100 kg and is usually mounted in the back of a dedicated Growler. The drone requires fuelling with gasoline, usually carried on the Phantom's dedicated 10-ton tanker/carrier truck.

Stats: Strength 7, Dexterity 7
Armour 6, **Hull** 3, **Structure** 3
Fittings: Camera, Night-vision, Thermograph, 4 x M65 Gecko Multi-Purpose Missiles
Price: $850,000

Mining Drone: The **Okuda-Hyundai HS900L Autonomous Excavator** resembles a very short, cylindrical tunnelling machine on tracks, the HS900L mining drone can angle its rotating cutting head hydraulically. Cuttings are fed through the centre of the machine and into a tracked cargo drone at the rear which is connected via a flexible sleeve. This cargo drone detaches when full and transfers its ore to a facility or mining ship, according to the situation. It can fill its 1-ton cargo drone with ore after 30 minutes of continuous drilling. Mining drones are supplied in sets of three with a complete computer/ 1 command and control interface and dedicated drone bay (total cost $1M, total volume 10 tons). Off -road speed is 30kph, endurance is 5 hours.

Stats: Strength 15, Dexterity 7
Armour 6, Hull 4, Structure 4
Fittings: Rotating Cutting Head, Autonomous Cargo Drone
Price (Complete Mining Drone System): $1,000,000

Probe Drone: These survey space phenomenon or planetary surfaces. Survey starships often carry a displacement ton of probe drones, which equates to five individual drones. They can be dropped from orbit in disposable entry shells but must be recovered manually. Probe drones are also capable of surveying orbiting satellites, derelicts and other space debris. They can also be used as communications relays. A single Aerodyne CLU Surveyor drone is 0.2 tons in volume and masses around 200 kg. The CLU is powered by a 100kW fuel cell and is equipped with a chemical rocket motor; it is equivalent to a small space probe of today, with a bank of cameras and sensors and a comms dish. The Aerodyne CLU can operate in space or on a planetary surface for one month. Once landed the probe is immobile, and so care must be taken in selecting its landing site.

Stats: Strength 3, Dexterity 7
Armour 5, Hull 2, Structure 2
Fittings: Chemical Rocket, Camera and Multi-spectral Sensor Suite
Price: $40,000

ANDROIDS

Fiery the angels rose. As they rose, deep
thunder rolled around their shores -
indignant burning with the fires of Orc.
William Blake

The modern android is a human-like, electro-mechanical cyborg designed for harsh conditions or monotonous tasks (or both). Built around a sturdy carbon fiber skeleton is a complex system of silicon muscles that stabilizes and controls. An outer covering of bio-plastic sheeting is built up on top of a layer of flexible collagenous fibers. The most modern androids operate with a Model/3 computer running either a level 1, 2 or 3 Intellect program. To calculate an android's Intelligence in comparison to a human, add 5 to its Intellect program level (giving it a character Intelligence characteristic of 6-8). An android's social standing stands at a default level of 0. It takes damage as if a vehicle.

Power is provided for around three months by a 25 kW fuel cell requiring a liquid hydrogen fuel. Obviously, androids do not need to breath, drink or eat, but they do occasionally ingest a pale-colored, semi-organic nutrient suspension in a silicon-based liquid medium; this serves as a lubricant for the system's micro-hydraulics. Some attempt to 'fit in' to their mission teams by eating and drinking at meal-times, these nutrients will pass through the system harmlessly until emptied by the android. Such an ability allows an android to blend in seamlessly, even covertly.

The machinery, processor, fuel cell and carefully designed outer skin can be damaged, so it is prudent for androids to wear vacc suits or hostile environment suits. Vacuum, high pressure, high temperature and aggressive atmospheric chemical constituents can all irreparably damage an android. The cost of a single unit precludes the avoidable and wasteful use of an android in such an environment. Most androids are competent and of average human intelligence. They are generally programmed with passive, non-aggressive personalities and are typically given the likeness of a mature (30-40 year-old) male or female. The aim is to blend in, to join in, to be a team-player within a group of humans, supporting the leadership and providing useful options and advice without being forceful. Androids cannot harm humans and follow Asimov's Three Laws of Robotics. See the chapter titled **Hiring On and Skills** for more guidelines on roleplaying androids.

All androids are ordered from Transdyne Cybersystems directly, all are custom-made and ready for delivery within 6-10 months. Buyers must specify their preferred options. To build an android, begin with a chassis, add software and then any preferred options.

Repair Station

Androids require an upright repair station, massing around 200 kg into which the android itself, steps. A transparent lid then closes, and the android plugs in, and undergoes a diagnostic and lubricant change; the fuel cell is topped up with liquid hydrogen also, if needed. Typically, androids will require a check-up every month or so, or after sustaining damage. Minor damage (that damage marked as a non-disabling component hit) can usually be repaired in 1-6 hours.

CUSTOM BUILDING AN ANDROID

System	Cost ($)	Notes
Chassis (choose one)		
70 Series	600,000	Str 7, Dex 5, Hull 2, Structure 1
90 Series	820,000	Str 9, Dex 7, Hull 2, Structure 2
110 Series	1,500,000	Str 11, Dex 9, Hull 2, Structure 2
CPU Modification		
Model/1	- 550,000	The default Epsilon has a Model/4 computer. Downgrading the CPU lowers the total cost. Model number limits the maximum level of a piece of software that can be run.
Model/2	- 400,000	
Model/3	- 300,000	
Model/4	default	
Intellect Software (choose one):		
Intellect 1.0	50,000	Intelligence 6, Education 10
Intellect 2.0	500,000	Intelligence 7, Education 11
Intellect 3.0	1,000,000	Intelligence 8, Education 12
Expert Software		*Combined skill levels can't exceed Twice Intellect*
Level 1.0	10,000	Select from: Agriculture, Aircraft, Comms, Computer, Demolitions, Electronics, Engineering, Ground Vehicle, Loader, Mechanical, Medical, Mining, Navigation, Pilot, Steward, Vacc Suit, Watercraft.
Level 2.0	100,000	
Level 3.0	1,000,00	

Note that combined Expert skill levels cannot exceed TWICE the android's Intellect. An android with Intellect 2.0, for example, could have four level-1 skills or two level-2 skills. It can only run a number of programs simultaneously in its active memory equal to the Intellect rating, however. Moving a single program from backup to active memory requires one hour of down-time.

Options	*Select a maximum of three options*	
Subdermal Armor	100,000	Provides Armor Rating +4 covering to the basic silicon musculature (providing a default AR of 3).
Infra-Red Vision	50,000	Can see in total darkness using only heat emissions
Anti-Dazzle Vision	50,000	Protects the eyes from flares, flash-bombs, strobes etc.
Optical Video Camera	50,000	Can record or stream to a receiver within 20 km.
Radio Scanner	10,000	A radio link using sub-vocalization, range 20 km.
Amplified Hearing	50,000	Adds a +2 bonus to listening tasks.
Radiation Shielding	100,000	Provides a 200 rad protection against radiation bursts.
Vacuum/Low-Pressure Protection	100,000	Allows access to vacuum or low-pressure worlds.
High-Low Temperature Protection	100,000	Allows access to high or low temperature worlds.

Carol 5

Since androids are custom made by Transdyne Cybersystems, the following machine serves as an example. Carol 5 appears as a woman in her early-thirties, blonde hair parted in the centre, with a typical cool, measured demeanor and the slight hint of an Australian accent. This example serves as a crewman onboard a VIP starship.

Chassis 70 Series: Strength 7 (+0), Dexterity 5 (-1), Hull 2, Structure 1
Software: Intellect 2, Expert Steward 1, Intelligence 7 (+1), Education 11 (+1), Social Standing 2 (-2)
Traits: Armour 7, Computer/3 (running Intellect/1 and Expert Steward/1, Expert Pilot/1, Expert Engineer/1, and Expert Vacc Suit/1)
Weapons: Punch (Natural Weapons, 1D6 damage)
Price: $850,000

SHELTERS

Whenever characters are not indulging in the creature comforts of civilization, they need shelter, such as the items described in this section.

Bintang SHERPA Pressure Tent: Basic pressurized shelter for two persons, providing standard atmosphere and conditions, along with protection from precipitation, storms, and up to strong winds. There is no airlock: the tent must be depressurized to enter or leave it. Cost $2,000. Weig

Kinako TigerPak: Basic life support supplies (waste reclamation chemicals, oxygen supply, CO2 scrubbers, etc.) necessary to support one person for one month in an enclosed, pressurized environment, such as a pressure tent or an advanced base. Cost $100. Weight 2 kg.

Kinako Wildlands Tent: Basic shelter for two persons offering protection from precipitation, storms, and temperatures down to 0º Celsius, and withstanding light to moderate winds. Larger, more elaborate tents capable of sheltering more people, higher winds or colder temperatures weigh and cost more. Cost $200. Weight 3 kg.

Leyland-Okuda Standard Modular Base 130: Modular unpressurized quarters for 6 persons and capable of withstanding light to severe winds. Offers excellent shelter from precipitation, storms, and temperatures down to -10º Celsius. Requires 8 man-hours to erect or dismantle. Dismantled and ready for shipment, the cabin weighs 4 tons. Cost $10,000. Weight 4,000 kg.

Leyland-Okuda Advanced Modular Base 230: Modular pressurized quarters with airlock for 6 persons and capable of withstanding anything less than hurricane force winds. Offers excellent shelter from precipitation and all but the most extreme of temperature ranges. Requires 12 man-hours to erect or dismantle. Dismantled and ready for shipment, the advanced base weighs 6 tons. The cost includes life-support for six people for 7 days. Cost $50,000. Weight 6,000 kg.

Safestar Type 1 Bio-Box: Some things need protecting from vacuum or hostile atmosphere, biological samples, delicate materials and even small animals (perhaps even pet cats and dogs). The Bio-Box is similar in size to a pet carrier, but is pressurized and comes with its own 6 hour air-supply. Cost $450. Weight 2 kg.

Yoshiko Fast-Tarp: A heavy, hard-wearing waterproof fabric made of polyvinyl, for outdoor use as a temporary shelter or protective covering against moisture. Includes cord and aluminum pegs. Measures 4 metres long by 2 metres wide. Cost $10. Weight 2 kg.

Description	Brand Leader	Cost ($)	Wgt
Life Support Supplies	Kinako TigerPak	100	2
Tarpaulin	Yoshiko Fast-Tarp	10	2
Tent	Kinako Wildlands Tent	200	3
Pressure Box	Safestar Type 1 Bio-Box	450	2
Pressure Tent	Bintang SHERPA Pressure Tent	2,000	25
Standard Modular Base	Leyland-Okuda Standard Modular Base 130	10,000	4,000
Advanced Modular Base	Leyland-Okuda Advanced Modular Base 230	50,000	6,000

SURVIVAL EQUIPMENT

Survival equipment helps the character stay physically alive and able to take action, even in the most unusual of environments. It includes camping and survival equipment.

Item	Brand Leader	Cost ($)	Wgt
Atmospheric Re-entry Kit	Tharsis M2 Ablative Canopy Orbital Re-entry (ACOR)	5000	100kg
Aqualung	Aquatech 3-Series Rebreather	4,000	4kg
Camping Furniture	Aldine Camp-Tech Folding Table and Chair Set	100	18kg
Cooking Kit	ARMI Cooking Kit	150	3kg
Cold Weather Clothing	Novomo, Bauspace, KNiTK, YoYo	200	2kg
Cooking Stove	ARMI Cooking Stove, Flameless	40	1kg
Diving Equipment	Aquatech Pro-Swim 600 Dive Set	200	3kg
Electric Fence	Lunar D-FEND Electric Fence	600	10kg
First Aid Kit	Haruna Priority First Aid Kit	50	0.5kg
Floodlight	Yoshiko AD321 Floodlight	400	8kg
Generator (Diesel)	Reiner-Gama 200 Portable Diesel Generator	4,500	170kg
Generator (Fusion)	Reiner-Gama 347 Portable Fusion Generator	500,000	170kg
Lantern	MagLite ML5 Lantern	30	1.5kg
Oxygen Tanks	Bintang RELY Oxygen Tanks	2000	4kg
Parachute	AeroFrame B6 Parafoil	800	12kg
Ration Pack	Kinako Sunrise Ration Pack	30	2kg
Rescue Bubble	Kinako BB6 Basic Bubble	600	2kg
Sleeping Bag	Yoshiko 567-8801 Sleeping Bag	35	1.5kg
Survival Kit	DeWitt Class 3 Survival Bag	150	6kg
Survival Mask	Yoshiko GP Surface Mask	150	--
Survival Suit	Tharsis H-10 Survival Suit	500	2kg
Trauma Kit	Haruna Serious Trauma Kit	350	6kg
Zero-G Thruster Unit	Rockford Aerospace Advanced Thruster Unit	2,000	5kg

AeroFrame B6 Parafoil: A steerable parafoil-style lightweight parachute, with altimeter, reserve chute, helmet and goggles. Cost $300. Weight 12kg.

Aldine Camp-Tech Folding Table and Chair Set: A folding camp table and six chairs. Use the table for dining, or as an equipment desk. Cost $100. Weight 18kg.

ARMI Cooking Kit: This cooking kit includes mess tins, cups and cutlery for six people. Cost $150. Weight 3 kg.

ARMI Cooking Stove, Flameless: Plastic tub stove with a metal liner, into which precooked food can be placed. A heat block is put underneath the metal tray and activated by water. The lid is sealed and the block heats up to thoroughly warm the food – it will be piping hot within 20 minutes. There is no flame and the heat does not penetrate the plastic box. Ration packs always include a couple of heat blocks with which to heat the food. Cost $40. Weight 1kg.

Aquatech 3-Series Rebreather: Extracts oxygen from water to allow the wearer to breathe for an unlimited time underwater. Functions only on worlds with thin, standard, or dense (type 4 through 9) atmospheres. Cost $4,000. Weight 4 kg.

Aquatech Pro-Swim 600 Dive Set: Includes swim fins, wet suit, face mask. Protects against the effects of cold (5º Celsius or below), along with improving speed and maneuverability underwater; add DM +1 to all movement skill checks in these situations when wearing proper swimming equipment. Cost $200. Weight 3kg.

Bintang RELY Oxygen Tanks: A complete set of compressed oxygen tanks with mask, protective goggles and carry straps; they allow independent breathing in smoke, dust, gas, underwater or in an exotic (type A) atmosphere. Two tanks last 6 hours. Cost $2000. Weight 4 kg.

Cold Weather Clothing: Protects against bitterly cold weather (-20º C or below). Adds a DM+2 to all Endurance checks made to resist the effects of cold weather exposure. Various brands offer arctic clothing, including Novomo, Bauspace, KNiTK, and YoYo. Cost $200. Weight 2 kg.

DeWitt Class 3 Survival Bag: This bright orange survival bag contains basic kit for one person and includes: a personal locator beacon, compass, first aid kit, survival suit, tarpaulin, expedition knife, head torch, 10 days of emergency rations, eight half-liter cans of water, surface mask, cord, rope, fishhooks & line, four coloured flares, mess tin and fire-lighters, six cold-light sticks and sleeping bag. Cost $150. Weight 6kg.

Haruna Priority First Aid Kit: A small medical kit carried on a pouch that fits onto a rucksack or belt. It contains basic items, bandages, a pressure dressing, antibiotics, painkillers, eye-wash, antihistamines and plasters. It contains enough supplies for two wound treatments. Cost $50. Weight 0.5kg

Haruna Serious Trauma Kit: A comprehensive medical bag, used by a paramedic or doctor to deal with serious injuries. The immediate responder trauma and first aid backpack is a complete system. The kit was originally designed for company safety personnel, first aid departments, disaster preparation and emergency response teams that would need to get to injured people and provide care on the scene. The high-vis, red backpack is organized into separate sections covering everything from burns to fractures, anaphylaxis to choking injuries, heart attack and many others. Contains enough supplies for six major treatments. Cost $350. Weight 6kg.

Kinako BB6 Basic Bubble: A large (2m diameter) pressurized and transparent plastic bubble. Piezoelectric layers in the bubble wall translate the user's movements into electricity to recharge the bubble's batteries and power its distress beacon, and a small oxygen tank both inflates the bubble and provides two person/hours of life support. There is no airlock. Rescue bubbles can sometimes be found on both space vessels and water craft as emergency lifeboats. Cost $600. Weight 2 kg.

Kinako Sunrise Ration Pack: A 24-hour ration pack provides a range of meals and snacks for one person for a single day, and includes 1 liter of additional water for cooking and making hot drinks. Cost $30. Weight 2kg.

Kinako Denali Ration Pack: A 30-day ration pack for hikers, campers, and soldiers. It includes snacks, shakes, and a pre-cooked package of pizza, sandwich, or pasta each day. Cost $900. Weight 33 kg.

Lunar D-FEND Electric Fence: This portable electric fence is 1m high and 30m long, it is mounted on 15 aluminum stakes and can be rolled up and slid into a 1m long carry bag. It comes with a rechargeable power cell that has a duration of 4 days. The charge given off acts as a mild irritant, similar to the stock fences used in agriculture, it will deter small to mid-sized creatures, but larger herbivores and carnivores probably won't even notice it. Cost $600. Weight 10kg.

MagLite ML5 Lantern: Folding lantern for illumination of a camp site. It comes with a 7 hour power cell and has a wire handle for carrying or hanging from a branch or tent pole. Cost $30. Weight 1.5kg.

Reiner-Gama 200 Portable Diesel Generator: A portable power unit can be invaluable in an environment without electricity. This 7000 watt generator can fit in the back of a four-wheel drive, it provides continuous electricity for 7 hours and includes a charging adaptor for most types of power cells. It runs on diesel, requiring 20 liters for a full tank and has an electric starter. Be warned that the generator is a diesel engine and makes a lot of noise. Cost $4500. Weight 170kg (with full tank).

Reiner-Gama 347 Portable Fusion Generator: This is a heavy-duty portable fusion generator, capable of recharging or powering equipment for up to six months of use. Cost $500,000. Weight 170 kg.

Rockford Aerospace Advanced Thruster Unit (ATU): A gas-fueled thruster pack gives the user the ability to maneuver in zero-gravity. A Vacc Suit skill check is required to use a thruster pack accurately. Thruster packs can only be used in zero-G environments and are only practical for journeys between spacecraft at Adjacent range. Cost $2,000. Weight 5 kg.

Tharsis H-10 Survival Suit: Designed to protect the wearer from extreme cold or heat (-50ºC to +50ºC), the environment suit has a hood, gloves and boots. Cost $500. Weight 2 kg.

Tharsis M2 Ablative Canopy Orbital Re-entry (ACOR): A personal re-entry kit, allowing a vacc-suited individual to enter a planetary atmosphere, survive, and parachute to the ground. This is a dangerous undertaking, usually practiced by US Marines. ACOR packs are huge and cumbersome, but when out of the airlock the user can activate the system which inflates a 5m diameter ballute behind, with him in the centre. The guidance computer and thruster unit which lay along his chest is now swung up, extended and activated. Descent begins with the ablative foam within the ballute sloughing off with the intense heat and friction. At an altitude of 15,000′ the main chute will deploy. Total time from orbit to touchdown is around 30-40 minutes.

Yoshiko 567-8801 Sleeping Bag: A warm and compact sleeping bag. Cost $35. Weight 1.5kg.

Yoshiko AD321 Floodlight: A portable LED floodlight mounted on a telescopic pole. The pole ends in four legs than can be pegged into the ground. At the base of each light is a rechargeable power cell. The floodlight has power for 16 hours of continuous operation. Cost $400. Weight 8kg.

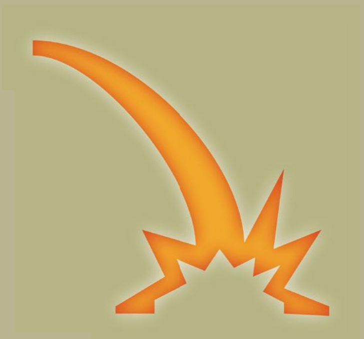
Yoshiko GP Surface Mask: A common Off-World survival mask that can filter contaminants, taints, smoke and dust (atmosphere types 4, 7, and 9) but that can also compress breathed air to allow survival in a low pressure atmosphere (types 2 and 3). Useful in Very Thin or Tainted atmospheres. Cost $150. Weight negligible.

ACOR: Surviving Re-entry

ACOR users must make a Average (+0) Vacc Suit roll to make a successful re-entry. Apply the following DMs:

+1 if Computer skill known
+1 if Navigation skill known
+1 if Pilot skill known
+1 World Size 1 or 2
+2 Marine career
-2 Atmosphere B
-4 Atmosphere C

Failure indicates being way off course or landing in a dangerous situation. Success indicates a perfect landing. A natural roll of 'double 2' indicates death or serious injury.



INTERSTELLAR COMMERCE ORGANIZATION

ICO

SPACESUIT OPERATION AND MAINTENANCE HANDBOOK

22-1

ICO-8046-3-2222-C

TOOLS

Technical skills require specialist tools of various kinds.

Description	Brand Leader	Cost	Wgt
Axe, Expedition	Novomo Forge Heavy Duty Axe	30	2.5kg
Card-Lock Decryptor	IE 505 Military Security Kit	1,000	200g
Capture Net, Small	various	15	2kg
Capture Net, Large	various	120	4kg
Climbing Kit	Bintang CLIFFHANGER Climbing Set	1,000	100kg
Electronics Toolkit	Novomo 300 Electronics Toolkit	1,000	12kg
Engineering Toolkit	Novomo 450 Engineering Toolkit	1,000	12kg
Forensics Toolkit	Luna 21 Forensics Toolkit	1,000	3kg
Handbook	various	100	0.4kg
Harpoon Grapnel	Yoshiko T78-45 Harpoon Grapnel	400	2kg
Mechanical Toolkit	Novomo 380 Mechanical Toolkit	1,000	12kg
Net Gun	Stern ArmaNet 14 Net Gun	900	4kg
Pen	Fisher AG7 Retractable Space-Pen	60	--
Scientific Toolkit	Novomo Real-Science 4DF Science Test Kit	1,000	12kg
Spade (Folding)	M1967 Folding Spade	30	1.2kg
Surveying Toolkit	Aldine Geo Survey Kit	1,000	12kg
Welder, Hand	Gulfstar Plasma 400	350	0.5kg
Winch, Tripod	Bintang S-CRANE Motorized Winch	880	2kg

Aldine Geo Survey Kit (GSK): Required for planetary surveys or mapping. This kit contains diagnostic sensors, hand tools, computer analysis programs and spare parts. It all comes in three impact-resistant cases. Cost $1,000. Weight 12 kg.

Bintang CLIFFHANGER Climbing Set: A set of harnesses and helmets for four individuals, with a bag of carabiners, pitons and two hammers. The set comes with a rope bag holding four ropes, all Olympus Unicore Dry Climbing Ropes (9mm x 20m; 10kg). Cost $1,000. Weight 100 kg

Bintang S-CRANE Motorized Winch: A telescopic tripod with motorized winch that can raise and lower up to 100kg. It includes 10m of cable. $880. Weight 3kg.

Capture Net, Small: A tough net, 4 sq. metre in size, used to catch small animals. It has other uses, too. $50. 2kg.

Capture Net, Large: A tough net, 8 sq. metres in size, used to catch small animals. It has other uses, too. $120. 4kg.

Fisher AG7 Retractable Space-Pen: Unlike ordinary ballpoint pens Fisher Space Pens have a pressurized refill which allows them to write upside down and at any angle as well as in extreme conditions, from -34°C up to 121° C. Not only can it write in zero-G but it can even write over grease and under water.

Gulfstar Plasma 400: A compact hand welder used either for welding together metals or for cutting through metal sheet. Burn time is 30 minutes before a refill gas bottle is required. Cost $350. Weight 0.5kg.

Handbook: Every important piece of equipment, has its own handbook, as do operating procedures, laws and starships. These technical books are printed on paper and published by the manufacturers. Some may save your life, if not for the crucial operating steps they include, but perhaps due to their page-count allegedly being able to stop a bullet. You may come across some of these important handbooks during your daily work:

ICO (Interstellar Commerce Organization)

- General Operation and Flight Handbook ICO-8045-1-2178-T
- International Commercial Spaceflight Law ICO-8034-8-2225-8-A
- ICO Inspectors' Handbook ICO-8038-4-2207-U
- Signals, Communications and Frequencies ICO-8029-5-2221-H
- Safety, Semiotics and Signage ICO-8044-10-2215-Q
- Spacesuit Operation and Maintenance Handbook ICO-8046-3-2222-C
- Starship Technical Manual ICO-8041-5-2218-K

MRA (Mining Regulatory Agency)

- Guide to Interstellar Resource Extraction Regulations MRA-3411-6-2211-F
- Catalog of Off-World Resources MRA-3421-8-2221-P
- The Working Practices in Space Industry Manual MRA-3500-12-2223-B
- Zero-G Machinery: Theory and Practice MRA-3428-8-2217-L

FCMS (Federal Colonial Marshal Service)

- Handbook to Off-World Law Enforcement FCMS-1011-2-2223-D
- Use and Effect of Firearms in Zero-G Environments FCMS-1185-12-2220-B
- Current Crime Gangs and Trends in the American Sector FCMS-1155-8-2215-V

USMC (United States Marine Corps)

- Combat Skills of the Soldier FM 21-75
- Survival FM 21-76
- First Aid FM 4-25
- Rifles, M24 Caseless Family TM 19-1005-223-20
- Tactical Radio Operations FM 6-09

IE 505 Military Security Kit: This military/intelligence-only unit is able to access card-locks and re-route the data to try and fool the lock's onboard processor into believing that it is the correct card. The processor unit is attached to a 'trojan' card via a multi-wire cable and is all carried in a large fold-out wallet. It allows a person with Security skill to try and break through a card-lock. Custom-made de-cryptors put together by crime gangs are generally illegal. Cost $1,000. Weight 200 kg.

Luna 21 Forensics Toolkit: Required for investigating crime scenes and testing samples. This kit contains diagnostic sensors, hand tools, computer analysis programs and spare parts. Cost $1,000. Weight 3 kg.

M1967 Folding Spade: A folding military shovel that packs down to the size of a baseball glove and fits into a snug protective case. One edge of the blade is serrated, allowing it to be used as a crude saw. This is an extremely useful piece of equipment. Cost $30. Weight 1.2 kg.

Novomo 300 Electronics Toolkit: Required for electrical repairs and installations. This kit contains diagnostic sensors, hand tools, computer analysis programs and spare parts. It all comes in three impact-resistant cases. Cost $1,000. Weight 12 kg.

Novomo 380 Mechanical Toolkit: Required for repairs and construction. This kit contains diagnostic sensors, hand tools, computer analysis programs and spare parts. It all comes in three impact-resistant cases. Cost $1,000. Weight 12 kg.

Novomo 450 Engineering Toolkit: Required for performing repairs and installing new equipment. This kit contains diagnostic sensors, hand tools, computer analysis programs and spare parts. It all comes in three impact-resistant cases. Cost $1,000. Weight 12 kg.

Novomo Forge Heavy Duty Axe: A polymer handled heavy-duty self-sharpening axe for camping, emergency rescue, construction, etc. Comes with a protective case for the steel axe-head. Cost $30. Weight 2.5 kg.

Novomo Real-Science 4DF Science Test Kit: Required for scientific testing and analysis. This kit contains diagnostic sensors, hand tools, computer analysis programs and spare parts. It all comes in three impact-resistant cases. Cost $1,000. Weight 12 kg.

Stern ArmaNet 14 Net Gun: This bulky gun is designed to launch small capture nets out to a range of 10m and is used to capture small, moving creatures. The net takes around 5 minutes to repack into its launch canister. It comes with 4 pre-packed net canisters. Cost $900. Weight 4 kg. (loaded).

Stern ArmaNet 14 Net Gun

Wgt	ROF	Range	Dmg	Recoil	Rnds
4kg	1	Pistol	Special	8+	1

Yoshiko T78-45 Harpoon Grapnel: Rifle-sized grapnel launcher, using compressed air to launch a spring-loaded grapnel up to a 10 metre height. It includes a small powered winch to haul the user (or up to 100 kg) up. The grapnel is often part of a well-equipped survival kit onboard starship lifeboats, as part of the kit's climbing gear. Cost $680. Weight 4 kg.

VEHICLES

In classic science fiction, characters rarely travel on foot. Vehicles play a big role in **HOSTILE** games. All vehicles have the following traits:

dTon: How much space the vehicle takes up according to the starship design rules. 1 dton is roughly equivalent to a weight on Earth of around 5,000 kg.

Agility (Agi): How easy the vehicle is to drive, expressed as a DM to the pilot's skill check.

Speed (Spd): The vehicle's maximum speed in kph. A cruise speed is 75% of the maximum speed.

Crew and Passengers (C/P): How many people the vehicle can carry.

Armour: How much armour the vehicle has. Damage sustained by a vehicle is reduced by its armour. Most vehicles have a base armour of 4 (steel or aluminum).

Hull/Structure: The hits that a vehicle can take before being disabled/destroyed when using the **Hostile Rulebook**. If using Cepheus Engine vehicle combat rules, double the values if they are above 3.

Weapons (Wpns): What weapons the vehicle has, if any.

Cost: How much the vehicle costs in American dollars ($).

Vehicle	Brand Leader	dTon	Agi	Spd	C/P	Armour	H/S	Wpns	Cost
Quad Bike	GoMo QuadTrack	0.75	0	68	1/2	-	1/1	None	4,000
Ground Car	AMC Aspen Four-Door	1	+2	150	1/4	4	3/3	None	6,000
MPV	Matsuyama Sirocco	2	+2	150	1/7	4	3/3	None	10,000
Off-Roader	Tharsis Coyote C180	2	+1	135	1/6	4	3/3	None	10,000
20-ton Truck	AMC Roadmaster	4	+0	135	1/2	4	15/15	None	12,000
Military Jeep	Gulfstar Growler	3	+1	135	1/3	4	4/4	LMG	30,000
Colonial Tractor	Seonwu Firefox	8	+2	135	2/6	4	10/10	None	60,000
Excavator	Chevrolet MM5 Bucket-Loader	3	+1	90	1/0	4	16/16	None	40,000
Mobile Mining Laser	AMC Dynamic 7100	3	-1	90	2/0	4	4/4	Pulse Laser	90,000
Dump Truck	Matsuyama EH1800	13	+1	90	1/0	4	30/30	None	100,000
ATV	Tharsis Armadillo GT800	10	+1	90	1/8	4	10/10	None	50,000
APC	Global Dynamics ARCC-50	5	+1	90	1/13	24	10/10	25mm Gun, 2x Pulse Lasers	100,000
Scissor Lifter	Aerodyne CLT-15	3	-1	40	1/0	4	4/4	None	56,000
Exo-Skeleton	General Exoframes Workloader	0.5	+2	20	1/0	-	1/1	None	50,000
Container Loader	Matsuyama Reachstacker RS1000	3	+2	100	1/1	4	5/5	None	80,000
Forklift	Voroncovo Forklift 4	0.75	+2	50	1/0	4	2/2	None	7,000
Hovercar	Shinobi Technics Hermes 206	1	+1	300	1/3	4	3/4	None	180,000
Tilt-Rotor Aircraft	Lockhart CV-24M Super-Osprey	5	-2	560	3/24	4	10/11	None	1 Mill
Utility Jump Jet	McConnell MX Vector Utility Jump-Jet	4	-1	420	2/8	4	5/6	None	300,000
Military Jump Jet	McConnell AV-105 Jump-Jet Gunship	4	-1	420	2/0	4	5/6	25mm Gun, rockets, missiles	600,000
Biz Jet	Leyland-Okuda Javelin	4	-2	2,000	3/15	4	12/12	None	2 Mil
Spaceplane	Tharsis Aerospace T23	40	0	10,000	4/30	4	20/20	None	3 Mill
Dropship	Global Dynamics UD-5 Mustang	20	0	10,000	2/14	4	20/20	25mm Gun, 2 rocket pods	4 Mill
Jump Jet	McConnell Kestrel	3	2	700	1/1	4	2/2	None	643,000
Mini-ATV	AMC Dynacat	1	2	50	1/1	4	1/1	None	4,200

Aerodyne CLT-15 Cargo-loader – A wheeled scissor-lift container-carrier, powered by a Gulfstar K27 Fuel Cell, that is used on many starport ramps. It can carry to the pad a single 3 ton intermodal container, raise it to a cargo hatch with its scissor lift action (up to 6m off the tarmac) and using powered rollers, slide the box into the ship's hold. It is driven from a small cab that is mounted on the vehicle's side.

AMC Aspen Four-Door Car – A popular road car used on Earth and some of the Off-World colonies. It is powered by a 110 kW fuel cell and can carry four passengers with 100 kg of luggage.

AMC Dynamic 7100 Mobile Mining Laser – Used on Off-World Mining installations, the Dynamic 7100 utilises a 50 MW deuterium fluoride laser able to vaporize unwanted rocky material, and to cut ore up into manageable chunks ready for transport by loader to the processor. The laser is mounted in a remotely-operated turret on a 3-ton caterpillar-tracked chassis. The Dynamic is powered by a 980kw closed cycle fuel cell, has a crew of 2 (driver and laser operator) and is equipped with towing bars, winches and a dozer blade, giving it some general versatility. The cab is not pressurized, although the vehicle can operate in a vacuum if the crew are suited.

AMC Roadmaster 20-ton Truck – A common sight on highways, turnpikes and motorways, the Roadmaster is a twin axle, six-wheeled truck, classed as 'mid-sized' that has a high body clearance making it popular also with the US military (in a modified version). The Roadmaster is powered by a 235 kW fuel cell (which can also be switched over to serve as a powerplant for other purposes if needed) and can carry 8,000 kg of cargo on its flat-bed. The cab has room for two passengers. There are hundreds of variations of the Roadmaster apart from the military version, including enclosed cargo box bodies, chemical tankers, crane booms and refrigerated cargo boxes ('reefers').

Chevrolet MM5 Bucket-Loader – A powerful four-wheeled excavator, the MM5 includes a weather-proof cab. Due to its Aztec 280 kW fuel cell powerplant, however, it is easily able to work in vacuum environments providing the operator wears a vacc suit. It is fully off-road capable, with large and rugged wheels and a front end bucket capable of scooping up to 5,000 kg of material in one go. Used by mining corporations across the Outer Rim as well as construction firms back on Earth.

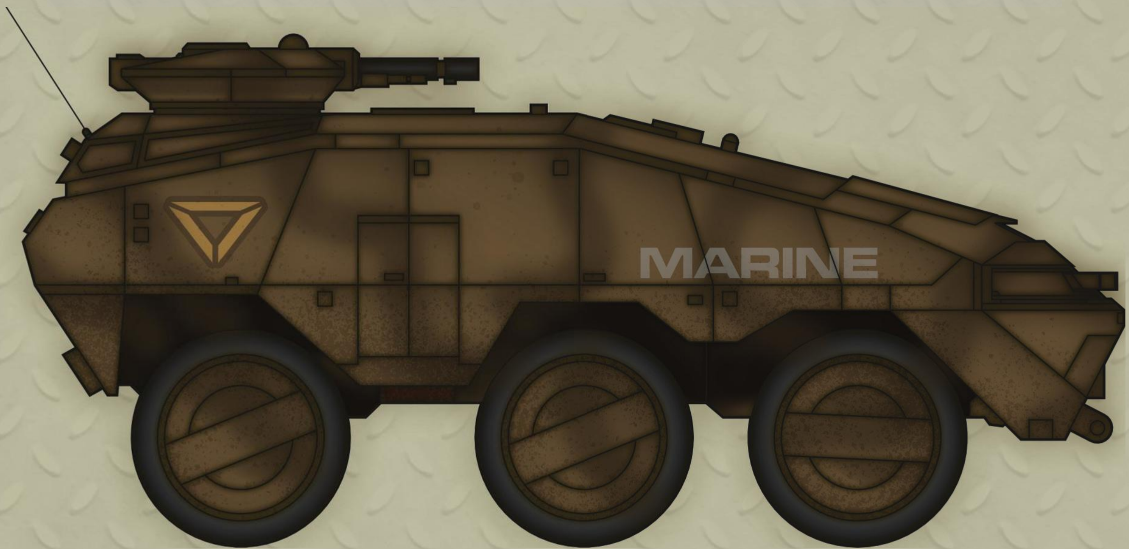
General Exoframes GE9 Workloader – A powered exo-skeleton operating on a Gulfstar K24 Fuel Cell that features two hydraulic vice manipulators on the end of each arm. With its legged, walking design, it serves as a great machine for varied loading tasks, loading in confined areas or over rough terrain. The Loader has a single operator and it can lift up to 4,000 kg. or a single 1-ton ICO container.

Global Dynamics ARCC-50 Armoured Combat Carrier – Each ARCC is a well-armoured hostile environment rover with complete life support systems for one month, advanced imaging systems and electronic defenses, with a cabin able to carry a 13-man squad. The crew of the ARCC is two: driver and gunner/commander. For self-defense the standard personnel carrier version of the ARCC carries a cupola-mounted GAU-122 25mm Gatling gun as well as a dorsal turret mounting two Zenith 28 MW free-electron pulse lasers. Other units in the US army and marines have their own ARCC variants. The ARCC is powered by a 450 kW fuel cell (a requirement when operating in vacuum conditions) and can achieve 90 kph with an operational range of 400 km.

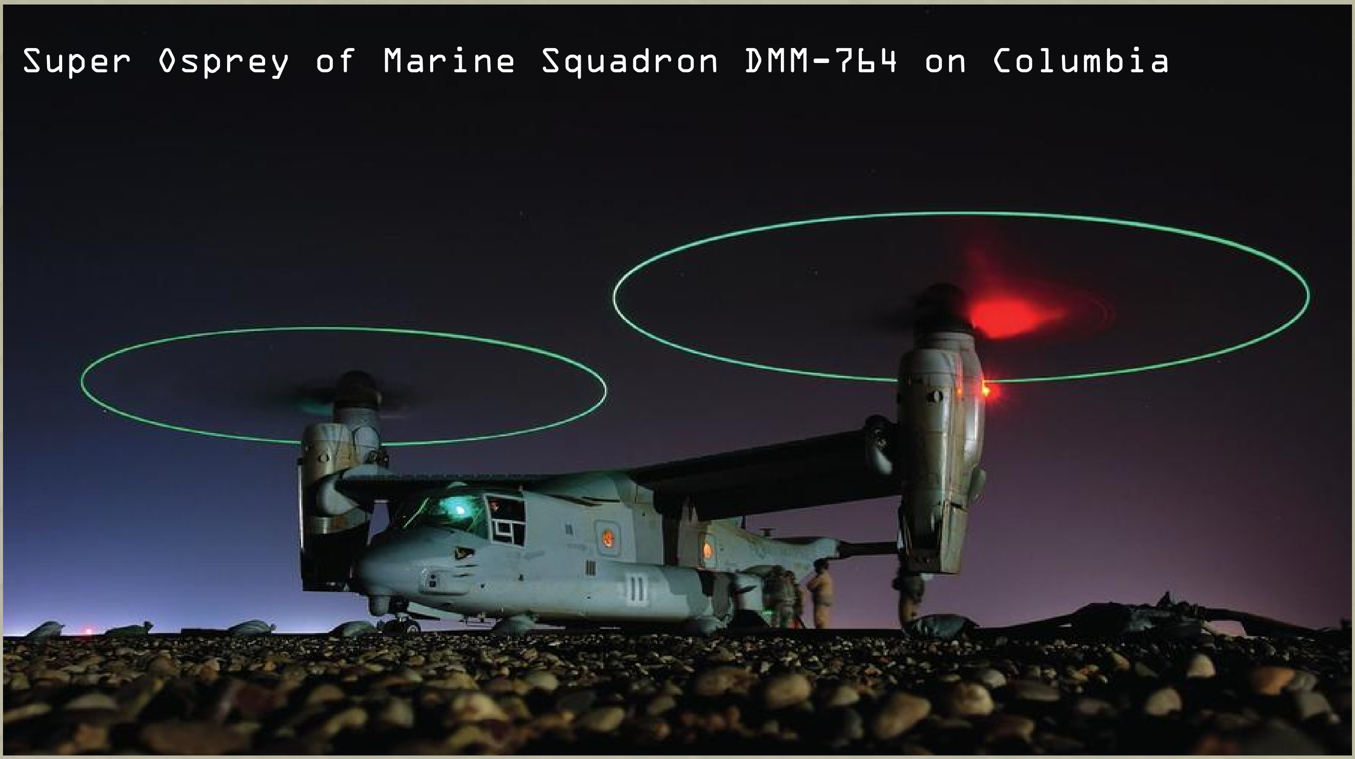
**Global Dynamics UD-5 Mustang Dropship – **The Mustang is a military spaceplane that is capable of reaching orbit and re-entering a planet's atmosphere. Mustangs are often used to drop marines on to an alien world with their APC and then return them to orbit to rendezvous with their starship. Each Mustang must fulfil a variety of battlefield roles, most important of which is troop transport - dropping an ARCC and its passengers directly onto a planetary surface. Additional duties include general transport, recon, tactical air support for the ground forces (especially the ARCC and its squad), forward observation, medevac and search and rescue. As an air support platform the dumpy but powerful Mustang boasts a forward firing 25mm Gatling Gun and two rocket pods each carrying twelve 70mm unguided rockets. The Mustang is able to operate in an atmosphere with its thrust-vectored jet turbines, and it is equipped with a Nortinghouse FDT-1124 ramrocket for exo-atmospheric maneuvering. The dropship has 6 tons of fuel, enough for 3 burns: one gets it into orbit, the other it uses to deorbit and begin its descent into Earth's atmosphere, the third is used for loitering and up to 6 hours of atmospheric flight. Under 60,000 feet altitude, the UD-5 Mustang is limited to subsonic speeds. An aft-facing cargo ramp extends to the floor for loading. There are folding acceleration seats for seven troops on either side of the cargo bay. With the seats unoccupied and no cargo carried, a 5-ton APC can be driven up inside the cargo bay. The Mustang has a 20 ton hull, costs $4M and requires a pilot and crew chief.

GoMo QuadTrack – A two-seat all-terrain quad bike, the QuadTrack employs four independent tracked assemblies, rather than four wheels, giving it impressive off-road performance. A driver sits up front with the handle-bar controls, while the passenger sits on a seat behind him. A 250kg equipment rack extends from the back of the fuel-cell powered vehicle. The QuadTrack is popular with mining groups and Off-World exploration teams.

Gulfstar Growler Utility Combat Vehicle (UCV) – The Growler is a four-wheel drive, utility combat vehicle, a light truck with dozens of military applications, from light transport to medevac, reconnaissance and fire support. It has space for a driver and three passengers, with a short flat-bed at the rear for small cargoes. There are many variants, which remove the rear seating and introduce a larger flatbed deck for a heavy weapons mount, or retain it as a larger cargo deck. The Growler incorporates floor armour as well as armoured doors and windows. A ring mount in the roof allows the front passenger to stand and operate a belt-fed M5A5 12mm coilgun machine gun. It is powered by a 180 kW fuel cell and can achieve a top speed of 90 kph.



Super Osprey of Marine Squadron DMM-764 on Columbia



Leyland-Okuda Javelin 4X – A supersonic private jet used on Earth by VIPs, governments and corporations to travel intercontinental distances. The Javelin carries a flight crew of two, one cabin attendant and up to 15 passengers. It is capable of 2,000 kph (Mach 2) and has a maximum range of 10,000 km.

Lockhart CV-24M Super-Osprey Tilt-Rotor Aircraft – This general purpose tilt-rotor aircraft has been in service for eighty years, and is itself an upgraded version of the original Bell/Boeing Osprey. With stub wings and rotating turbofan engine nacelles on the tips, the 'super-sprey' is capable of vertical take-off like a helicopter and then a transition to standard forward flight, with a respectable aircraft-like speed of 560 kph. It has a range of 950 km and carries three crew (two pilots and a loadmaster/crew chief) and up to 24 combat-equipped troops. Used by many airforces and militaries around the world.

McConnell AV-105 Jump-Jet Gunship – This military version of the MX Vector is equipped with milispec avionics and countermeasures. Its standard weapons fit includes a chin-mounted turret with 25 mm cannon, and side-mounted 70mm rocket pods usually coupled with M30 anti-armour missile launchers. The AV-105 can serve as a battlefield tank destroyer, or serve as protection for a flight of Vectors dropping troops into a landing zone. Speed is 420 kph and range around 400 km.

McConnell MX Vector Utility Jump-Jet – Replacing helicopters in many roles, the utility jump jet uses vectored turbofans for stability, control and forward thrust. The Vector can be configured to carry either 16 passengers or 5,000 kg of cargo, and incorporates a single side-mounted sliding door and a rear cargo ramp. It is used for search and rescue, cargo or passenger transport, fire-fighting, observation and police duties. It requires a crew of two. Speed is 420 kph and range around 400 km.

Matsuyama EH1800 – The EH1800 is an immense dump truck (or haul truck) that is used on Off-World mines to transport up to 20 tons (or 100,000 kg) of waste rock out of the mine, or to ferry freshly mined ore to the processor. It is loaded by a bucket-loader. The EH1800 is 10m in length and the top of the cab stands 5.7m above the ground. A stairway on the side of the cab allows the driver to reach the door. These dump trucks are huge, ponderous machines with an open-box bed, which is hinged at the rear and equipped with hydraulic pistons to lift the front, allowing the material in the bed to be dumped on the ground behind the truck at the site of delivery. Powered by a 2000 kw fuel cell, the truck cab is unpressurized requiring the drive to be suited whilst operating in hostile environments.

Matsuyama Reachstacker RS1000 – A wide wheel-base cargo mover operating on a Nortinghouse Transmat 310kw Gas Turbine with a single powerful telescoping boom ending in clamps that allow it to pick up, manipulate and rotate standard 1-ton, 2-ton and 3-ton cargo containers. It has a crew of one with an additional jump-seat, a 167kg tool bay and a reach of 15m. A variant is powered by a 280 kw fuel cell for work in oxygen-deprived atmospheres.

Matsuyama Sirocco Multi-Purpose Vehicle (MPV) – This multi-purpose vehicle (MPV, or 'people-carrier') can carry seven passengers along with 200 kg of luggage. The seating is configurable, it is possible to turn the rear seats inwards for a club-style arrangement. There is a rear door, as well as a sliding door for passenger use on the right hand side of the vehicle. Powered by a 150 kW fuel cell.

Seonwu Firefox Tractor - The Seonwu Firefox Tractor is used as a multi-purpose all-terrain vehicle in the Off-World Colonies. It can carry a team of up to eight workers (including two driver/operators) into harsh environments and within a deadly atmosphere. Each is fully enclosed and capable of sustaining eight people for one week in a vacuum, high or low temperature environment or in unbreathable atmospheres. It provides some protection from radiation, but cannot survive the crushing pressures and metal-melting temperatures of a corrosive or insidious atmosphere (types B and C). A compact kitchen is built-in, along with a chemical toilet, air and water recycling system. It has a 2,000 kg cargo area, and at the rear, power couplings to accept any of the following tools: digging tools ($25,000), cutting tools ($10,000), geology bore drills and samplers ($100,000), spring stampers ($50,000), welders ($10,000), dozer blade ($20,000), heavy telescopic crane ($100,000) or manipulator arms ($50,000). Each of these is interchangeable, requiring around 2 hours work, a winch and some technical knowledge. The tractor is powered by a 1000 kW fuel cell. Maximum speed is 135 kph and range around 1200 km.

Shinobi-Technics Hermes 206 Hovercar – The smallest jump-jets in operation are a whole new class of private vectored turbofan transports. Used by government authorities, by the largest corporations and by the wealthy, these hovercars have added an extra layer of activity to the biggest cities. The Hermes hovercar requires a single pilot, and has capacity for three (cramped) passengers. Luggage space is a basic 250 kg. The Hermes is capable of a maximum of 300 kph in level flight, but is generally restricted to airspace limits of 150 kph. The vehicle has fuel for 4 hours of operation and can reach an altitude of 5,000 feet. A ballistic parachute system can be deployed in case of engine failure.

Tharsis Aerospace Nimbus T23 Spaceplane – Human travel into orbit no longer depends on rockets or rocket-mounted shuttles, instead comfortable and economical spaceplanes now make the journey. The Nimbus T23 series of spaceplanes are streamlined passenger liners capable of taking off from a runway on Earth and then returning as a glider. The manoeuvre drive of a Nimbus is a SABRE synergistic air breathing rocket engine that accelerates the airliner to hypersonic speeds. It can reach low Earth orbit, but not move beyond it. The T23 spaceplane has 6 tons of fuel, enough for 2 burns: one gets it into orbit, the other it uses to deorbit and begin its descent into Earth's atmosphere. The Nimbus has a 40 ton hull and costs $3M. It has a crew of 4 and carries 30 passengers.

Tharsis Armadillo GT800 All-Terrain Vehicle (ATV) –The Tharsis Armadillo is used when conditions are extreme, an all-terrain vehicle capable of carrying a team of explorers across a harsh environment and within a deadly atmosphere. Armadillos are used on alien worlds as trucks, personnel transports and expeditionary 'camper vans'. Each is fully enclosed and capable of sustaining eight people for one month in a vacuum, high or low temperature environment or in unbreathable atmospheres. It provides some protection from radiation, but cannot survive the crushing pressures and metal-melting temperatures of a corrosive or insidious atmosphere (types B and C). A compact kitchen is built-in, along with a chemical toilet, air and water recycling system and eight fold-away sleeping cots. The Armadillo is powered by a 1000 kW fuel cell. Speed is typically 90 kph and range around 1200 km.

Tharsis Coyote C180 Off-Road Vehicle – Rugged and hard-working, the Coyote is a powerful four-wheel drive off-road utility vehicle, capable of traversing steep slopes, rough terrain, sand, gravel, snow and mud. It is a common sight on the Off-World Colonies. Powered by a 180 kW fuel cell, the Coyote carries six passengers and 200 kg of cargo internally, with the capability to carry another 100 kg of luggage on a roof rack.

Voroncovo Forklift 4 Series – A compact four-wheeled cargo mover operating on a Gulfstar K24 Fuel Cell. It has a crew of one and can lift 2,000kg of palletized cargo up to 4.5m.

McConnell Kestrel Jump-Jet – A light, two-man scouting jump-jet built for tough colonial conditions. Following a couple of hours prep, the Kestrel is ready for flight. It is capable of flight within hostile environments (hot, cold, radioactive, poison, etc.) and at altitudes up to 22,000'. It includes a 250 kg cargo capacity. Range 2000 km.

Advanced Motors Dynacat – A simple but rugged amphibious all terrain vehicle. Open topped, with very basic skid steer controls, the Dynacat is a great runabout for colonial worlds, used by miners, farmers and technicians. It can climb steep inclines and is buoyant, with motive power in the water being provided by the turning motion of the six thick-tread tyres. Range 375 km.

MELEE WEAPONS

A number of melee weapons are described in the table below. Each column is described as follows:

Cost: Price in dollars ($)
Wgt: Weight in grams (g) or kilograms (kg).
Range: The range category for this weapon.
Damage: The damage a weapon inflicts.
Die Modifier (DM): A modifier to the attack roll based on the suitability of the weapon for hand-to-hand combat.

Weapon	Cost ($)	Wgt (g)	Range	DM	Dmg
Unarmed Strike	--	--	melee (close quarters)	+0	1D6
Short Club	--	1000	melee (close quarters)	+0	2D6
Long Club	--	2000	melee (extended reach)	-1	2D6
Knife, Expedition	60	250	melee (close quarters)	+0	2D6
Knife, Combat	120	250	melee (close quarters)	+1	2D6
Short Spike	--	1000	melee (close quarters)	-1	2D6
Long Spike	--	1500	melee (extended reach)	-1	2D6
Axe, Expedition	30	2500	melee (extended reach)	-1	3D6
Folding Spade	30	1500	melee (close quarters)	-2	2D6
Machete	50	350	melee (extended reach)	-1	3D6

Axe: A heavy axe used by fire-fighters, loggers, carpenters, expedition team members, etc. It makes a devastating weapon but is not balanced for hand-to-hand fighting. The axe is one metre long.

Club: A basic stick used as a weapon. Easily obtained from standing trees or metal pipework, or any other long stick-shaped improvised weapon – including an unloaded long gun such as a rifle. A short club is anything up to 1m in length, while a long club is anything between 1 and 2 metres in length

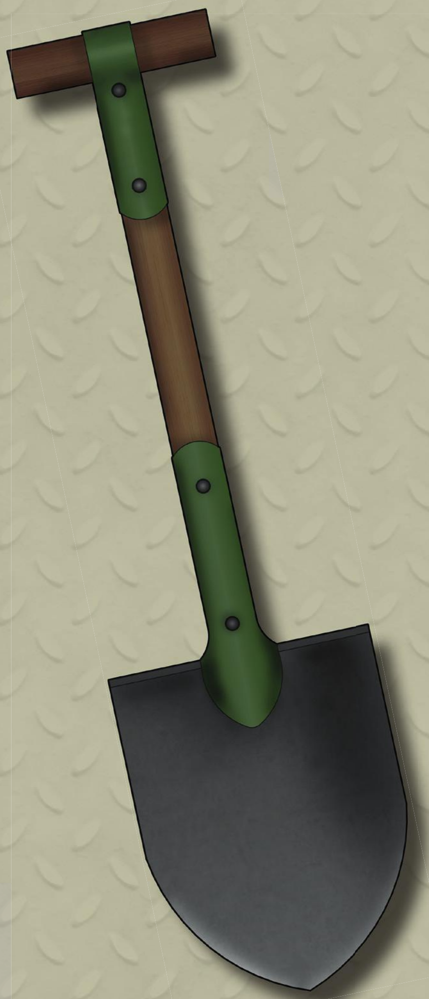
Combat Knife: Typified by the Gerber Mark II, the combat knife is a lethal, serrated, two-edged fighting knife used by marines, soldiers and other military personnel. It makes a decent camp-knife, too. It is approximately 200mm in length and is generally carried in a sheath strapped on military shoulder webbing, on a belt or less frequently concealed in a boot sheath or strapped to the forearm. Combat knives are usually as much a tool as a last-resort weapon of defense, and worn constantly. Each weighs 250 grams.

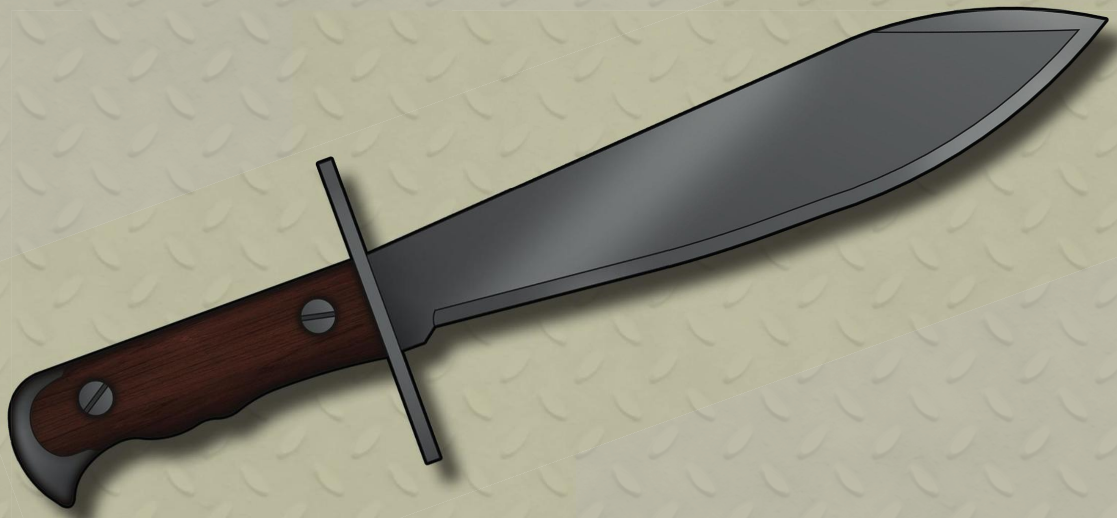
Expedition Knife: A camping, hunting or survival knife that is used for skinning and butchering animals, setting up camp, simple woodcraft and survival activities. It comes with a sheath as well as a built in compass and knife-sharpener. The knife is an able hand-to-had weapon. Length: 250mm.

Folding Spade: The military folding spade or 'entrenching tool' has been used in many conflicts as a weapon of last resort, from the days of Julius Caesar to the Vietnam War. It is short, with a sharp cutting blade and can be wielded in hand-to-hand combat if no other weapon is at hand. The spade is 60 cm long, but folds down to 24 cm and fits within a polymer carrier for mounting on a rucksack or belt.

Machete: A large, heavy, single-edged knife used in cutting vegetation to clear a camp site. It can also be used as a large camp or field knife. It is generally carried in a belt scabbard. Machetes are more survival tool than weapon, and are often found in emergency kits, lifeboats etc.

Spike: Any improvised weapon with a point or spike on the end. A short spike is classed as anything up to 1 metre in length, while long spike is any pointed improvised weapon between 1 and 3 metres in length.





FIREARMS

Firearms in 2225 are still mainly gunpowder-based, some still utilize brass cartridges for their reliability and safety within a whole range of hostile environments. New technologies are being introduced; many frontline military forces now have caseless ammunition for their advanced combat rifles. All military rifles are of a bullpup configuration. Laser rifles are in use as sniper weapons, as are high-energy magnetic acceleration coilguns. Coilguns are also making headway as reliable, frictionless machineguns. Still, shotguns are ever popular, particularly because there is little danger of one puncturing a starship or colony hull. Other than some of the remaining revolvers in use, automatic pistols are typically just that, fully automatic, capable of 4 round and sometimes even 10 round bursts. This may just be a fashion. This section looks at firearms category by category, but first ammunition is presented.

Ammunition

All firearms require reloading with rounds or power-packs, and in most cases these ammunition supplies are unique to that weapon. The table below provides the details of ammunition used by the guns in this chapter.

Reading the Ammunition Data

Each ammunition listing gives the following information:

Cost: In American dollars ($).
Wgt**:** Weight in kilogrammes.
Rds**:** Number of rounds the weapon fires before it must be reloaded/ recharged.

Common Ammunition Types

Pistol Calibres
10mm Corta (10x22)
7.65mm SR Browning (7.65x17)
.44 Mag (10.9×33)

Rifle Calibres
6.50mm (6.50x50)
7.78mm (7.78x52)
8.85mm FSDS Caseless (8.85x25)
9mm HE Caseless (9x28)
12mm HVADS (12x67)

Shotgun Shells
12 Gauge (18.5mm)

Grenade Launcher Shells
30mm

Ammunition for Which Firearm	Cost ($)	Wgt (kg)	Rds
ASA M3 Hydra IMAG	200	2.0	250
ASA Hoplite Combat Shotgun	15	0.6	8
ASA Taurus Auto	15	0.2	20
Automat Kaliningrad AKZ-4	20	0.6	30
Maverick G6 Grenade Launcher	180	0.5	6
Maverick M24 Rifle & Carbine	30	0.5	60
Maverick M68 LMG	75	0.88	100
MLT Flame Unit	60	1.5	6
Noricum M44 Revolver	5	0.12	6
Noricum 37 Stakeout	10	0.4	4
Singapore Arms SA66	20	0.5	25
Stern Universal T51	20	0.4	8
Stern Weapons 2000 Shotgun	10	0.4	5
Stern Weapons VP70	10	0.16	16
Steyr-Brandt StG 340	75	0.88	100
Voroncovo M5A5 Auto Coilgun	100	6	100
Voroncovo M33 Coilgun	18	0.6	10
Williams Auto Redhawk	10	0.16	16
Williams Model 9 Stun Gun	20	0.1	5
Zenith M1000 Combat Laser	75	1.0	10
Zenith XM4 Plasma Gun	300	2	38

Reading the Firearm Data
Each firearm listing gives the following information:

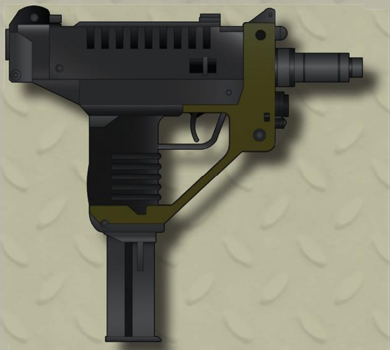
Cost**:** In American dollars ($).
Wgt**:** Weight, unloaded, in kilogrammes.
ROF**:** The number of rounds that may be fired during a significant action in the combat. This entry will read either: *1* (Single Shot), *4* (4-rd Burst) or *10* (10-rd Burst).
Range**:** The range category for the weapon.
Dmg**:** The damage in six-sided dice that a weapon inflicts.
Recoil**:** The Strength required to fire the gun. If under this value (even due to wounding), apply a -1 DM to all shots.
Min.Str: ASA M3 Hydra does not have recoil, but is very heavy to carry/wear. The operator must have this minimum strength to carry and fire the gun.
Lgth: Weapon length in centimetres, with any stocks extended.
Rds**:** The capacity of a weapon's magazine.

The weapons listed in the following section are those firearms commonly available within the **HOSTILE** setting. They include:

Handguns

ASA Taurus Auto [7.65mm]

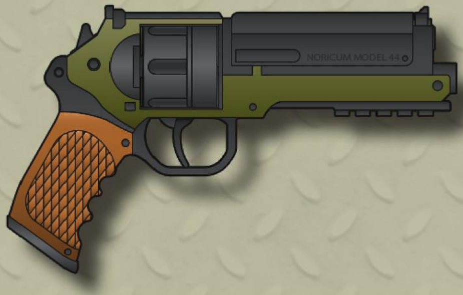
Cost ($)	Wgt (Kg)	ROF	Range	Dmg	Recoil	Lgth (cm)	Rds
300	1.2	1/4/10	pistol	2D6	5+	24	20



Firing a light-weight 7.65x17 Browning round with fairly low recoil, the ASA Taurus is capable - not just of 4-round bursts - but of sustained 10-round bursts. This advantage has seen the gun accepted by many police and security forces.

Noricum M44 Revolver [.44 Mag]

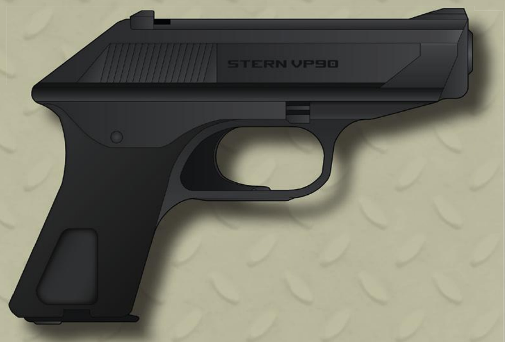
Cost ($)	Wgt (Kg)	ROF	Range	Dmg	Recoil	Lgth (cm)	Rds
650	1.25	1	Pistol	2D6+2	9+	29	6



The Model 44 may look retro, but it is a cutting edge design. Yes, it is a revolver, but it is incredibly reliable and a misfire can be ignored with another pull of the trigger. The Model 44 fires a .44 Magnum round, one of the biggest of the handgun calibers. It features custom amber grips and an in-built red-dot laser sight and range-finder. An LED on top of the frame provides range indication through color change.

Stern Weapons VP90 [10mm Corta]

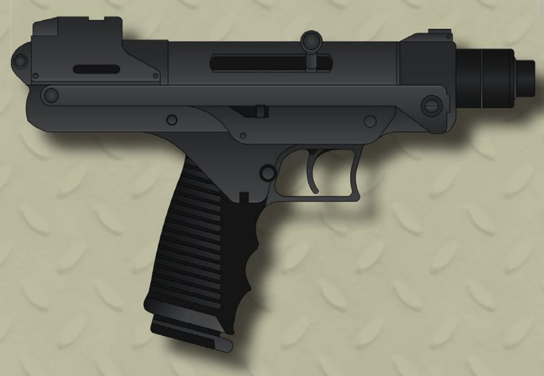
Cost ($)	Wgt (Kg)	ROF	Range	Dmg	Recoil	Lgth (cm)	Rds
200	0.8	1/4	pistol	2D6+1	8+	20	16



The VP90 is a reliable 10mm machine pistol that has been re-designed and re-engineered many times over the past fifty years – but the design is a strong one and its reliability and accuracy have never been bettered. Used as a US Marine sidearm, as well as a close protection firearm for security troops throughout human-explored space. It features a double column magazine (to cram in 10 x 22mm Corta bullets) and a high-impact plastic receiver.

Williams Auto Redhawk Model 4 [10mm Corta]

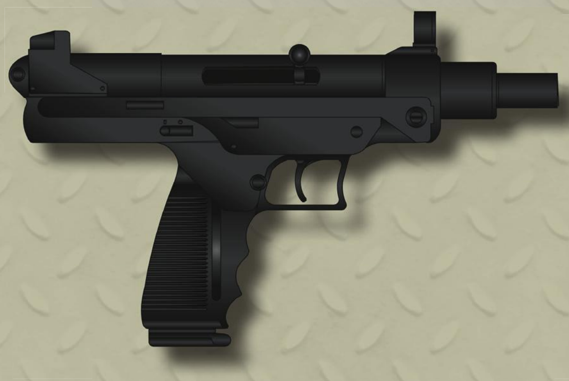
Cost ($)	Wgt (Kg)	ROF	Range	Dmg	Recoil	Lgth (cm)	Rds
175	0.74	1/4	Pistol	2D6+1	7+	19	16



TThe Williams Auto Redhawk Model 4 is one of the most popular auto pistols in use today. Capable of single-shot, for more accurate fire, it also has a burstfire option. The 10x22m Corta rounds have a lethality that is appreciated by security forces and police units across human space, but the round is still just about manageable in burst mode. Of course, auto fire in a weapon this size requires some skill - a two-handed hold on the weapon is recommended by Williams Arms. A later development, the Model 5, was designed to improve the otherwise lacklustre accuracy of the Model 4.

Williams Auto Redhawk Model 5 [10mm Corta]

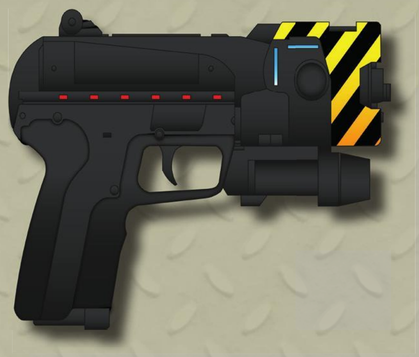
Cost ($)	Wgt (Kg)	ROF	Range	Dmg	Recoil	Lgth (cm)	Rds
250	0.75	1/4	Pistol	2D6+1	6+	20	16



The Williams Auto Redhawk Model 5, like the Model 4, is one of the most popular auto pistols in use today. Capable of single-shot, for more accurate fire, it also has a burstfire option. The 10x22m Corta rounds have a lethality that is appreciated by security forces and police units across human space, but the round is still just about manageable in burst mode. The Model 5 features a 2cm extension to the barrel and a revised front sight in the form of a front post in a hooded ring. The Model 5 was designed to improve the otherwise lacklustre accuracy of the Model 4.

Williams Model 9 Stun Gun

Cost ($)	Wgt (Kg)	ROF	Range	Dmg	Recoil	Lgth (cm)	Rds
500	0.5	1	pistol	2D6 special	-	18	5

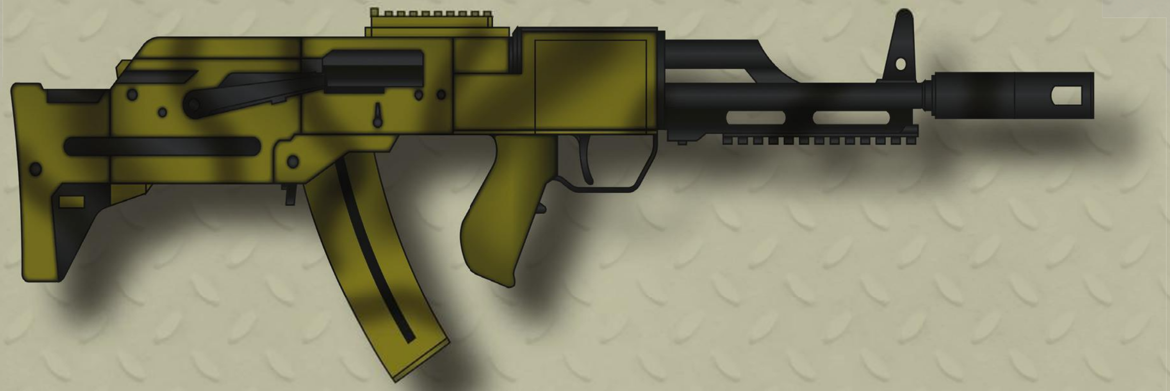


Twenty-third century stun guns use focussed sonic waves to disorientate and hopefully incapacitate their victims. They are a non-lethal alternative to handguns, easy to handle with no recoil, but useful only at short range. When hit by the Stun Gun, a target makes an End roll with a DM penalty equal to the damage rolled. Subtract armour from this damage. If failed, the target is unconscious for 1D6 minutes. If successful, then the target takes a -1 penalty to his actions for 1D6 minutes, but is otherwise free to act

Rifles

Automat Kaliningrad AKZ-4 [6.50mm]

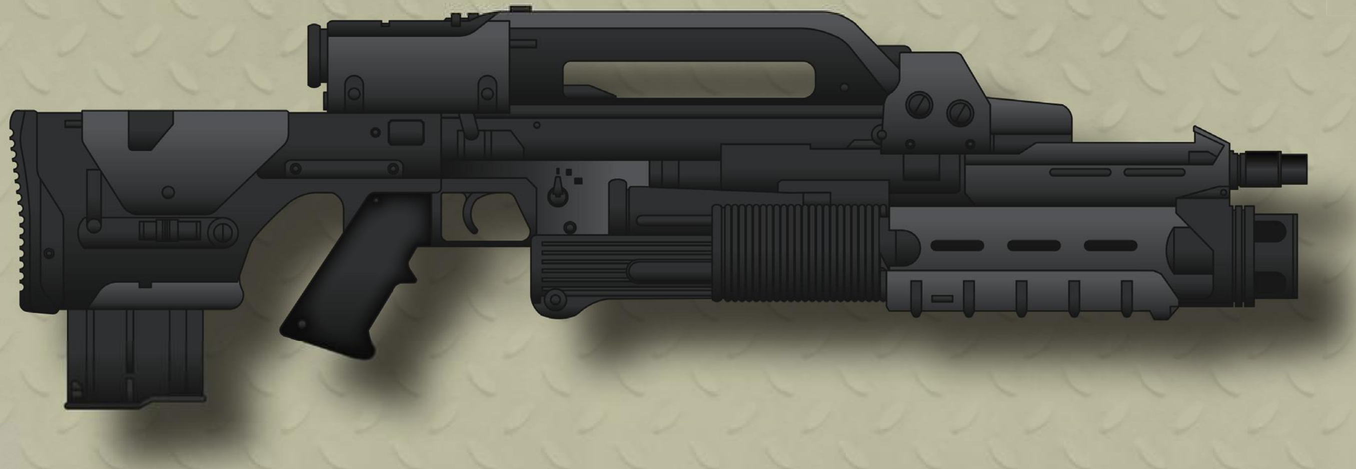
Cost ($)	Wgt (Kg)	ROF	Range	Dmg	Recoil	Lgth (cm)	Rds
1600	3.6	1/4/10	assault	3D6	6+	78	30



The Kalashnikov family of military rifles have a long pedigree and have been produced by various manufacturers over the years; from the AK-47, the AKM, the AK-74, the AK-100 , 200 and 300 series, and finally the AKZs. The AKZ-4 is a rugged bullpup assault rifle fitted with a magazine holding 30 x 6.50mm rifle rounds. A large selector allows single-shot, 4 round or 10 round bursts. In essence it is the same light-weight polymer rifle as the AK-340, but now chambered for the ubiquitous 6.50mm military rifle round. Rails for scopes and other attachments are fitted on the underside of the barrel and on top of the receiver.

Maverick M24A1 ACR [8.85mmCL]

Cost ($)	Wgt (Kg)	ROF	Range	Dmg	Recoil	Lgth (cm)	Rds
2000	4.6	1/4/10	assault	3D6+2	7+	80	60

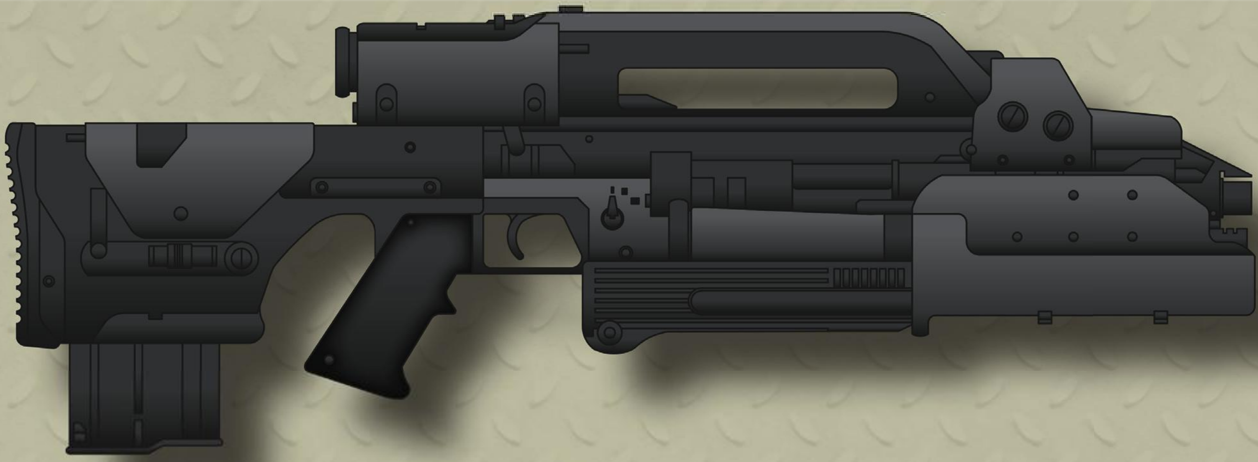


The M24A1 represents the cutting edge of American military firepower. It is an advanced assault rifle firing high-velocity 8.85mm FSDS discarding sabot bullets at 1200 metre per second. It uses an annular gas piston located around the barrel and a vertically moving bolt, making it possible to minimise the length of the receiver group and have a magazine located at the extreme rear of the weapon. A U-shaped rammer/extractor is used to chamber the caseless rounds by pushing them into the chamber. The rearward positioning of the magazine maximizes the length of the barrel itself, improving both range and accuracy. Sighting is done with an integral AN/PVS-29 telescopic sight (4x magnification), which features hybrid IR and light-intensification imaging. Each caseless 5.60mm round is embedded deep within a polymer casing that is packed with consolidated propellant - this is ignited by the M24A1's electrical firing mechanism.

An M340 30mm grenade launcher is mounted under the barrel and it utilises a high-low recoil-minimising propulsion system. This launcher holds a total of four grenades and a round is loaded into the breech ready for launching by cycling a pump-action grip. A selector above the trigger allows the firer to choose between safety, single-shot, four round or ten round bursts. It also has a setting for the grenade launcher, which means that the grenades are fired using the same trigger as the 8.85mm rounds. The launcher does make the rifle a little front-heavy and this has earned the rifle its nickname of 'the pig' amongst US troops. Marine veterans claim PIG stands for 'Piss-poor Infantry Gun' whilst others contend it stands for a 'Pain In-the-ass Gun'. Some show a preference for the M24A3 carbine.

Maverick M24A3 Carbine [8.85mmCL]

Cost ($)	Wgt (Kg)	ROF	Range	Dmg	Recoil	Lgth (cm)	Rds
1600	3.6	1/4/10	assault	3D6	6+	78	30



The M24A3 is a shortened carbine version of the standard M24A1 advanced combat rifle. It is an advanced carbine firing high-velocity 8.85mm FSDS discarding sabot bullets at 1200 metre per second. It uses an annular gas piston located around the barrel and a vertically moving bolt, making it possible to minimise the length of the receiver group and have a magazine located at the extreme rear of the weapon. A U-shaped rammer/extractor is used to chamber the caseless rounds by pushing them into the chamber. The rearward positioning of the magazine maximizes the length of the barrel itself, improving both range and accuracy. Sighting is done with an integral AN/PVS-29 telescopic sight (4x magnification), which features hybrid IR and light-intensification imaging. Each caseless 5.60mm round is embedded deep within a polymer casing that is packed with consolidated propellant - this is ignited by the M24's electrical firing mechanism.

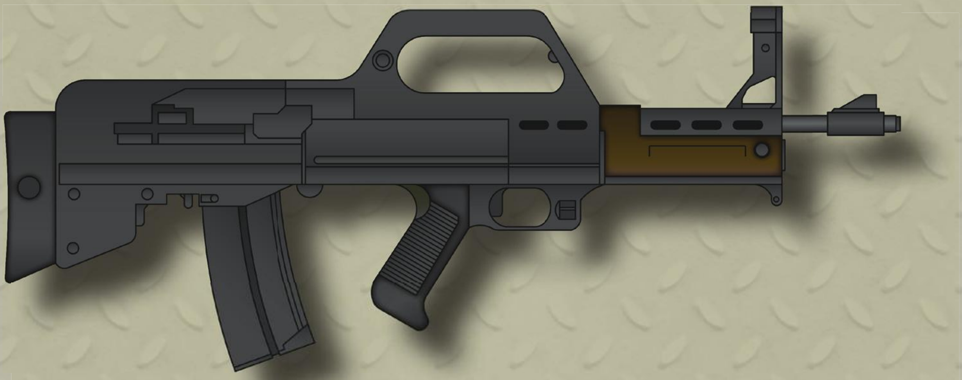
This version is used by jump-jet and armoured vehicle crews who appreciate its compact design, as well as by police forces, private military contractors and rear-echelon troops (signallers, drivers and mine-clearance troops, etc.), Dispensing with the M340 grenade launcher, the carbine is much lighter and it features a much shorter barrel. Due to this shortened barrel it is less accurate and less powerful, especially at long ranges. The lighter weight also increases the recoil, despite the weapon's internal compensation.

All of this gadgetry should not leave you with the impression that the Marines are going soft. He (or she) is still a rifleman, who closes with the enemy for the kill. Every Marine asset, from a dropship to a mobile kitchen, a cargo workloader to a first aid station, is there only to serve that single unwavering aim: to get the bullet or the bayonet into the enemy's body - to prevail. Semper Fidelis,

Victor-Saint Rodriguez,
General and 81st Commandant of the U.S. Marine Corps

Singapore Arms SA66 [6.50mm]

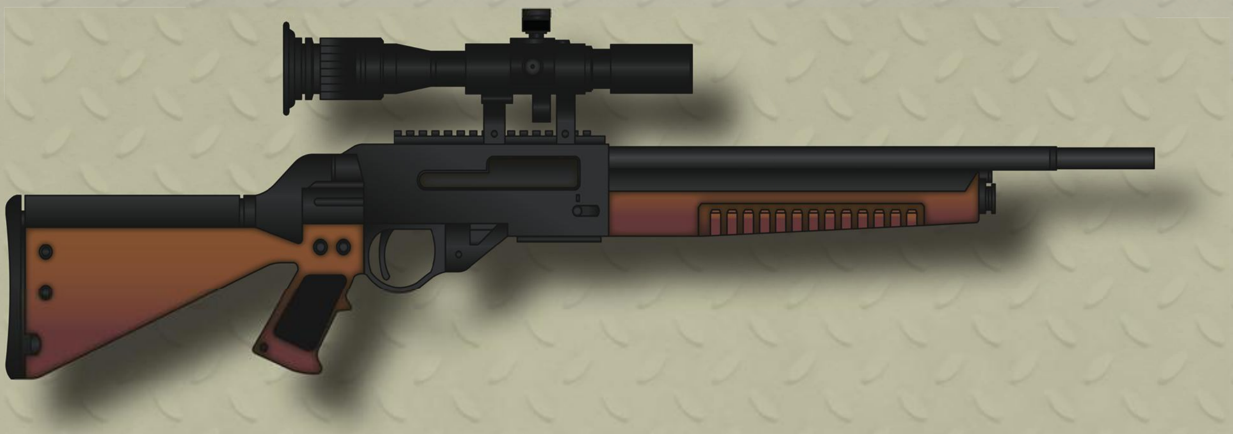
Cost ($)	Wgt (Kg)	ROF	Range	Dmg	Recoil	Lgth (cm)	Rds
1000	3.3	1/4/10	assault	3D6	7+	75	25



The Singapore Arms SA66 is a light-weight assault rifle firing the standard military 6.50mm rifle round. The gun is sold fairly cheaply and found in service with a host of security forces and the armed forces of small nations. It is particularly popular with colonial forces and by colonists out on frontier worlds, who need a simple, light-weight but effective rifle to hand. It incorporates a carrying handle and a simple vacuformed clamshell body. Perhaps contributing to the weapon's popularity is its light weight, reliability and its ease of use. On the downside, the recoil is quite harsh making the gun a little hard to keep on target.

Singapore Arms SA66 [6.50mm]

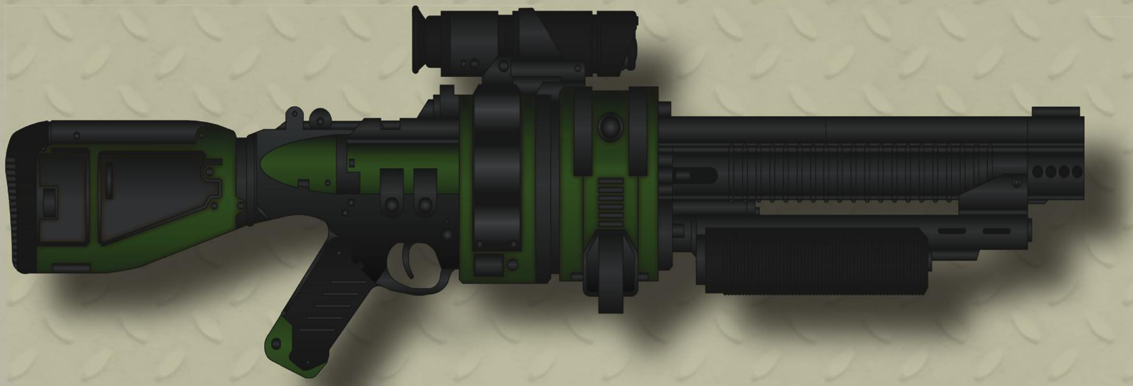
Cost ($)	Wgt (Kg)	ROF	Range	Dmg	Recoil	Lgth (cm)	Rds
1000	3.3	1/4/10	assault	3D6	7+	75	25



This semi-automatic rifle fires one round for every pull of the trigger. It fires a powerful 7.78 x 52 bullet with some accuracy out to 1200m. The Universal T51 is popular with security marksmen, woodsmen and colonists who need a rifle for both survival and hunting. A snug, form-fitting 8 shot magazine is inserted forward of the trigger assembly. Integral optical sights come as standard, but they can be removed. In fact, the entire rifle can be easily disassembled and stored within a purpose-made impact-resistant carry-box. The intention was for the gun to remain in a pristine condition when not used during activities in the colonies (bouncing around in ATVs or thrown in the back of a temporary pressurized base). This ability to break down the T51 has seen it gain some use with hitmen out on the frontier.

Voroncovo M33 Coilgun [12mm HVADS]

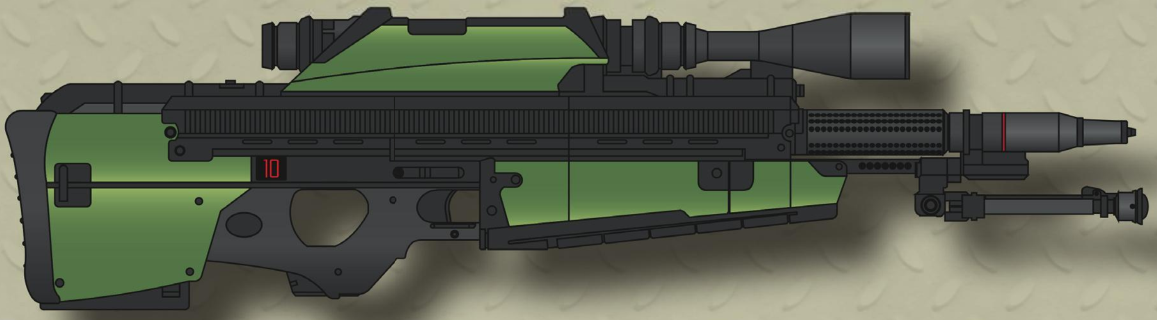
Cost ($)	Wgt (Kg)	ROF	Range	Dmg	Recoil	Lgth (cm)	Rds
3000	5.5	1	rifle	4D6+2	8+	103	10



The Voroncovo corporation has introduced a new type of magnetic coil technology, bringing magnetic acceleration to the infantryman's battlefield. The coilgun is a large caliber sniper and anti-material rifle that accelerates ferrous rounds through electromagnetic coils that are powered by a high-energy liquid-metallic suspension battery. Discarding sabot rounds are loaded into the gun in a 10 round magazine to the rear of the trigger assembly. Each is a 12mm HVADS (High Velocity Accelerated Discarding Sabot) that is given imparted spin using bias in the magnetic field. After leaving the barrel, the sabots fall away to reveal the 9.46mm teardrop-shaped bullet that consists of hardened steel, surrounded by a softer copper jacket with a hollow-point tip. The combination of high-velocity (upwards of 1400 metre per second), hollow-point tip and dense core, gives the round superb stopping power as well as an effective armour-piercing capability. The real limit on coil gun technology is the dependence on power and so the M33 is a precision sniper rifle, a weapon that will not be firing hundreds of rounds a minute.

Zenith M1000 30MW Combat Laser

Cost ($)	Wgt (Kg)	ROF	Range	Dmg	Recoil	Lgth (cm)	Rds
3500	4.2	1	rifle	4D6+2	-	80	10

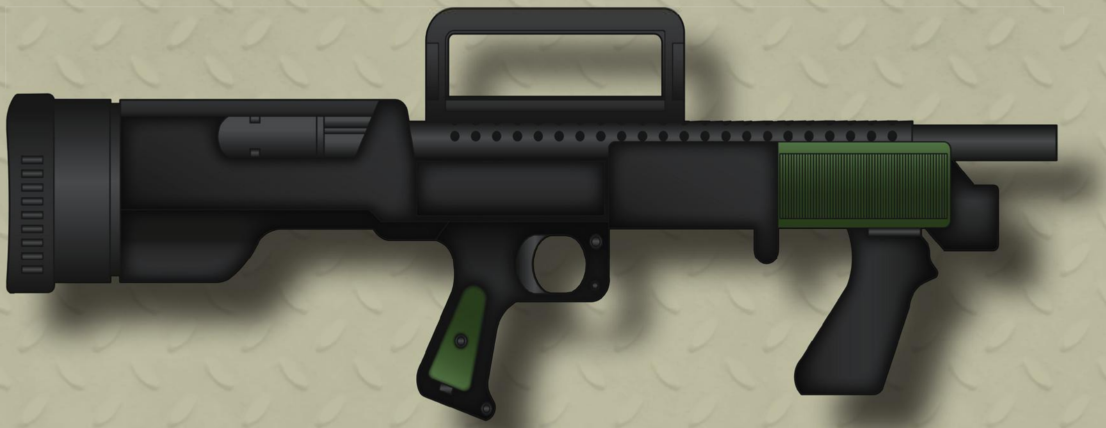


Zenith is renowned for its optics and range of laser weapons - the M1000 is the lightest and most portable of all of the company's firearms. On a trigger pull, the liquid metallic suspension battery charges a fast-discharge generator which briefly stores then releases that energy as a pulse. The high energy, short-duration beam causes instantaneous and extreme temperature change in a target's surface causing vaporization and thermal shock. The rifle is used for precision sniper attacks at extremely long range, and to target this long range weapon Zenith have fitted a sophisticated, gyrostabilised electronic sighting system. The battery slots into the underside of the stock. A bipod is fitted.

Shotguns

ASA Hoplite Combat Shotgun [12 gauge]

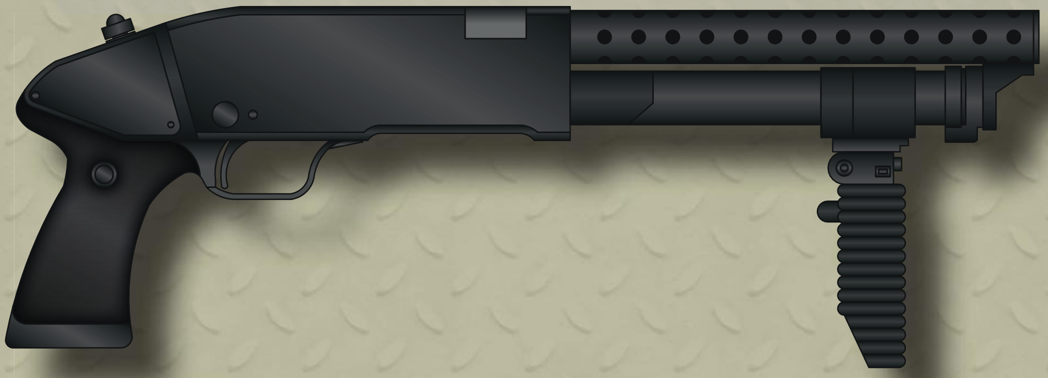
Cost ($)	Wgt (Kg)	ROF	Range	Dmg	Recoil	Lgth (cm)	Rds
2000	3.8	1/4	shotgun	4D6	6+	81	8



The Hoplite is touted as a fully automatic shotgun, and it is capable of firing 4 round bursts, but such short-range, indiscriminate firepower has little use other than in gang warfare. More-often, the weapon is purchased for its handy bullpup layout, smooth semi-auto (one shot per pull of the trigger) action and accessory rail above the barrel for laser sights, torches etc.

Noricum 37 Stakeout [12 gauge]

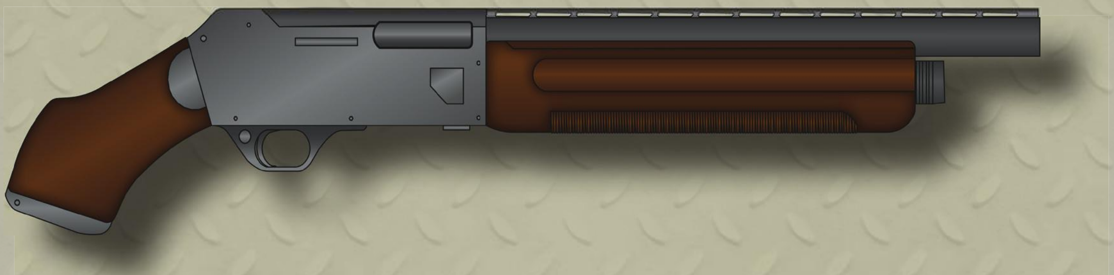
Cost ($)	Wgt (Kg)	ROF	Range	Dmg	Recoil	Lgth (cm)	Rds
600	3	1	pistol	4D6	9+	76	4



The Noricum 37 is based on a 1946 design; it has since proven itself for more than two centuries as a workhorse shotgun of worldwide police forces, security companies and military units. It is in essence, the bare bones of what a shotgun needs to be, cutting everything down in size to create a very handy and easily used weapon, in buildings, streets, jungles, starship corridors and mining installations. No wonder it is a favourite of the US Colonial Marshals. The gun is pump-action, and includes a folding stock. It is capable of being concealed under long, loose clothing. A tubular magazine inserted beneath the barrel holds 4 shells.

Stern Weapons 2000 Shotgun [12 gauge]

Cost ($)	Wgt (Kg)	ROF	Range	Dmg	Recoil	Lgth (cm)	Rds
780	3	1	shotgun	4D6	8+	77	5

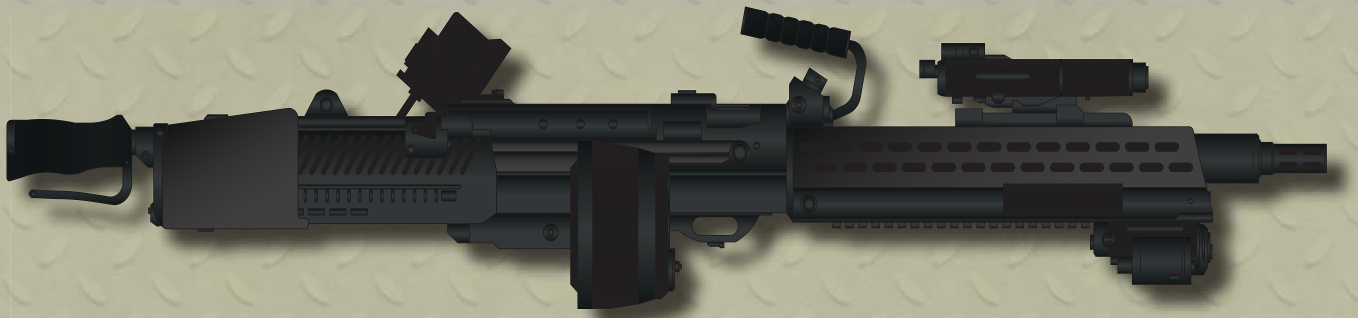


Stern has been producing shotguns for over two hundred years, and the 2000 is a design that has changed little in that time. It is semi-automatic (one shot per pull of the trigger), rather than pump-action, and is sold for use on colony outposts and starships in a 'personal defense' layout [the stock is removed and the barrel shortened drastically]. A tubular magazine inserted beneath the barrel holds 5 shells.

Machineguns

ASA M3 Hydra IMAG [9mm HE]

Cost ($)	Wgt (Kg)	ROF	Range	Dmg	Recoil	Lgth (cm)	Rds
5000	16	4/10	rifle	3D6+4	7	122	250

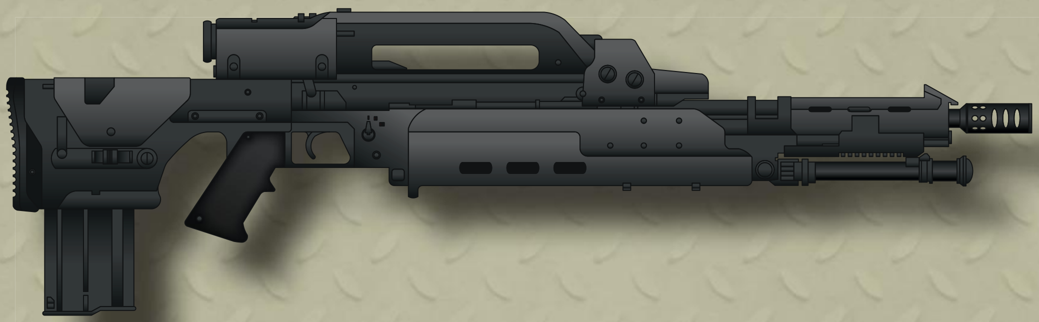


ASA M3 Hydra IMAG [Intelligent Machinegun Auto-Guiding] - A light machinegun attached to a steady-mount and operator's harness, the operator can aim the gun through 180 degrees in front of him, squeezing the calliper-like trigger to fire the weapon. The Hydra will self-steer the barrel under the operator's guidance making the system accurate (+1 to all attacks). Tracking is via both motion tracker and infra-red sensor mounted above and below the barrel – these send target images to the user's smart goggles that are connected to the gun via cable and jack.

Supplied by an ammunition drum holding 250 rounds of 9x28mm caseless, the IMAG Hydra is used to provide suppressive fire, to deal with armoured troops, equipment, and with soft-skinned vehicles. It does this with a slightly larger and more powerful round than used in the M24 series of rifles. The 9x28mm round is designated as HE (high explosive), giving the squad a real punch.

Maverick Defense M68 Light Machine Gun [8.85mmCL]

Cost ($)	Wgt (Kg)	ROF	Range	Dmg	Recoil	Lgth (cm)	Rds
2800	6.6	1/4/10	rifle	3D6+2	6+	90	100



The M68 is a light machinegun variant of the standard M24A1 advanced combat rifle. In order to fulfil its role as a squad support weapon, the M68 is fitted with a longer and heavier barrel that can cope with sustained burst fire without over-heating. In addition, the grenade launcher has been dropped in favour of a folding bipod, used to support the weapon as it provides covering fire for the rest of the squad during fire and movement operations. Like the M24A1 the M68 fires high-velocity 8.85mm FSDS discarding sabot bullets at 1200 metre per second. It uses an annular gas piston located around the barrel and a vertically moving bolt, making it possible to minimise the length of the receiver group and have a magazine located at the extreme rear of the weapon.

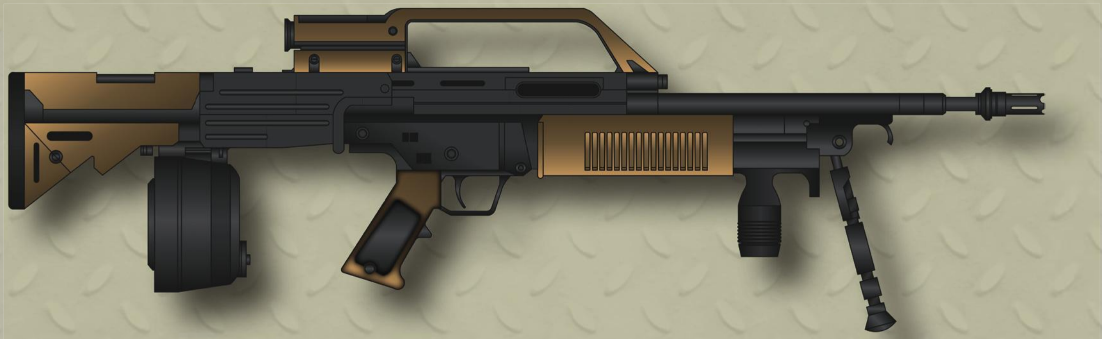
A U-shaped rammer/extractor is used to chamber the caseless rounds by pushing them into the chamber. The rearward positioning of the magazine maximizes the length of the barrel itself, improving both range and accuracy. Sighting is done with an integral AN/PVS-29 telescopic sight (4x magnification), which features hybrid IR and light-intensification imaging. Each caseless 5.60mm round is embedded deep within a polymer casing (of 8.85mm calibre) that is packed with consolidated propellant - this is ignited by the M68's electrical firing mechanism. The barrel is fitted with a flash suppressor to minimize the gun's signature when under observation from hostile forces.

In the late 2000s and early 2100s, the Marines flirted with a variety of recoilless firearms that would be viable both on a planet's surface and in zero gravity. The Colt G202 Gyrojet proved the most successful of these, but in 2130, when artificial gravity was becoming standard on space stations and spacecraft, the need for such a weapon disappeared. McConnell have recently developed a new gyrojet firearm, the Zero-5 for those times when a space-walking individual might need access to lethal force (the Zero-5 Gyrojet Pistol appears in the Zozer supplement called Hostile Gunlocker).

Combat Skills of the Soldier FM 21-75, Department of Defense

Steyr-Brandt StG 340 [8.85mmCL]

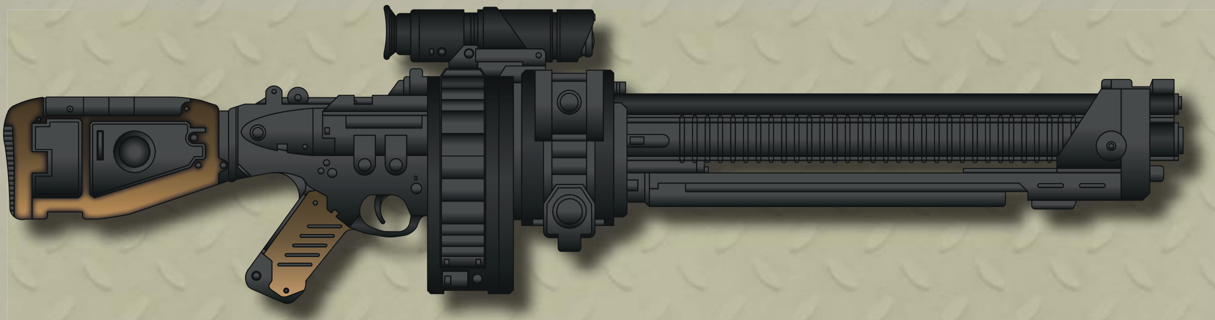
Cost ($)	Wgt (Kg)	ROF	Range	Dmg	Recoil	Lgth (cm)	Rds
2300	6.2	1/4/10	rifle	3D6+3	5+	86	100



The Steyr-Brandt StG 340 is a heavy assault rifle used either as a light machinegun, or with the bipod removed and the ammo hopper swapped for a 30 round box magazine, as an assault rifle. Quick conversion to a rifle lightens the gun to 4kg. The StG 340 fires the modern high-velocity 8.85mm discarding sabot bullet at 1200 metre per second. Each caseless 5.60mm sabot round is embedded deep within a polymer casing (of 8.85mm calibre) that is packed with consolidated propellant - this is ignited by the Steyr's electrical firing mechanism. The 340 is used by several armies, including Germany, Great Britain and Brazil.

Voroncovo M5A5 Auto Coilgun [12mm HVADS]

Cost ($)	Wgt (Kg)	ROF	Range	Dmg	Recoil	Lgth (cm)	Rds
12,000	9.5	1/4/10	rifle	4D6+2	4+	105	100



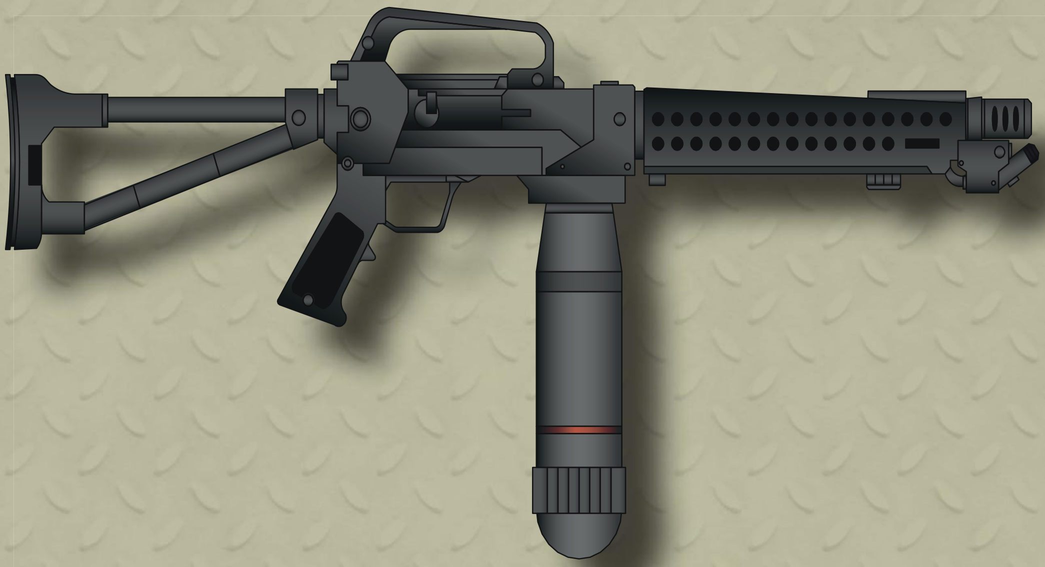
A development of the M33 sniper coil gun, the Auto Coilgun is heavy machinegun, used in anti aircraft defense and as an auxiliary weapon on many types of military vehicle. The weapon overcomes the power dependencies of the M33 by relying on the powerplant of its host vehicle. Auto Coilguns can also be mounted on to a tripod (mass 15kg) as an infantry support gun and these are supplied with an M2 CAPSU (Combined Ammunition and Power Supply Unit). Like the M33, the fully automatic M5A5 accelerates ferrous rounds through electromagnetic coils that are powered by a high-energy liquid-metallic suspension battery. The 12mm rounds are loaded into the gun via a flexible ammunition belt that feeds from a side-mounted hopper. The high velocities attained by the coilgun produce flat and very accurate trajectories. Various types of ammunition can be used by the weapon including:

HVADS (High Velocity Accelerated Discarding Sabot)	Anti-personnel
HVAAP (High Velocity Accelerated Armour Piercing)	Anti-vehicle (ignore 8 pts of armour)
HVAAP-I (High Velocity Accelerated Armour Piercing- Incendiary)	Anti-vehicle (ignore 10 pts of armour)

Flamethrower

MLT Flame Unit

Cost ($)	Wgt (Kg)	ROF	Range	Dmg	Recoil	Lgth (cm)	Rds
500	2.5	4	pistol	2D6	5+	70	6



The MLT Flame Unit ignites a jet of thickened napalm which it squirts forward out of the barrel. The direct fire range of the MLT is only 30m, but any target hit is automatically on fire. Targets beyond 30m (and out to its extreme range of 50m) can only be hit by indirect fire, angling the weapon at an angle and letting the jet of napalm fall on the target. The victim takes 2D6 damage immediately. In each subsequent round, the burning character must make another Difficult (-2) Dexterity check. Failure means he takes another 2D6 damage that round. Success means the fire has gone out. The character on fire may automatically extinguish the flames by jumping into enough water to douse himself, spraying himself down with a fire extinguisher, vent all atmosphere or otherwise smother the flames. If the character has no such means, rolling on the ground or smothering the fire with cloaks or the like permits the character a DM+2 on his next Dexterity check.

Firearms Accessories

The following options are generally available for certain ranged weapons.

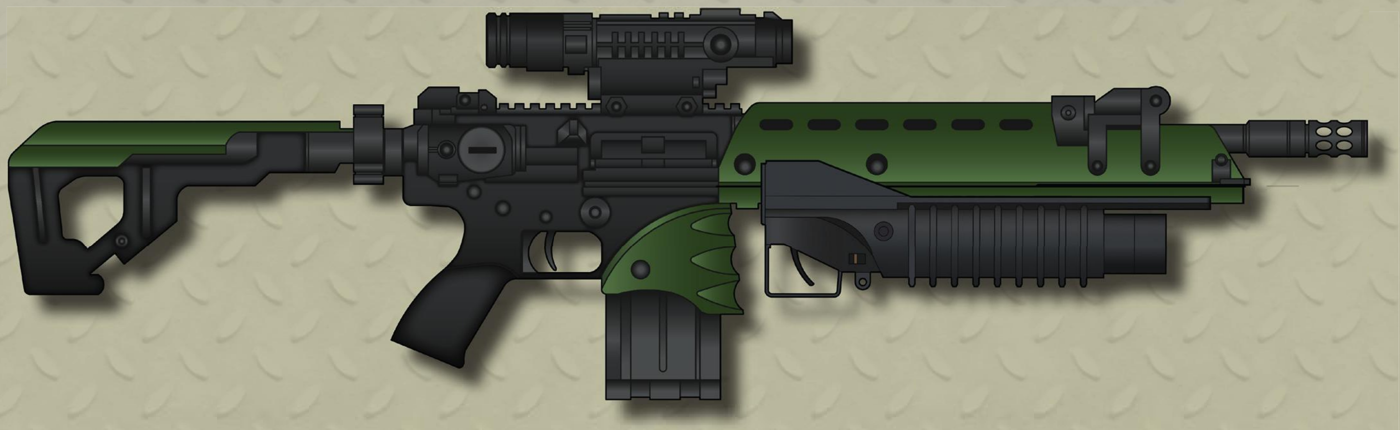
Underslung Grenade Launcher - An underslung 30mm grenade launcher can be added to any rifle. This grenade launcher has a magazine of one grenade, cannot fire on automatic and takes four minor actions to reload.

Laser Sight - Integrated optics and red-dot laser sights give an extra +1 DM bonus to any attack that has been aimed. Cr200.

Suppressor - A suppressor can be added to any non-energy weapon with a ROF of 4 or less, partially masking the sound produced by firing (–4 DM to detect).

Scope - High-quality telescopic sights with image intensification and low-light capabilities for night-shooting. These are attached to the upper surface of firearms, in order to increasing their accuracy, especially at longer ranges. A weapon equipped with such sights gains an extra +1 DM bonus to any attack that has been aimed. Scopes are delicate, however, and may be jarred out of alignment by any violent action (such as being left untended in a moving truck, a close explosion, or being dropped) on an 8+ on 2D6. When the sights go out of adjustment, the firer will always miss. Some guns already come with integrated scopes, see the individual descriptions.

Accessory	Brand Leader	Cost ($)	Wgt (kg)
Laser Sight	Okuda HR1 Terminal Spot Laser	200	1.5
Scope	Inferno Electronics 500 Powerscope	1000	0.8
Suppressor	Voroncovo KL Suppressor	300	--
Underslung Grenade Launcher	Noricum Railrider 30GL	1000	1

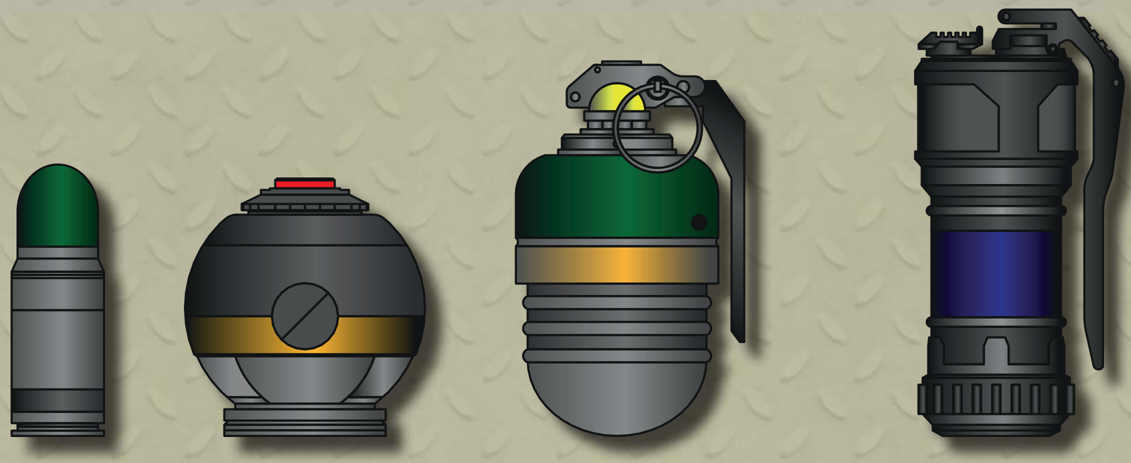


Grenades

A grenade is a small explosive device designed to be thrown by hand (treat as Ranged [thrown] for Difficulty by range) or launched from a grenade launcher (treat as Ranged [shotgun] for Difficulty by range). Hand grenades and 30mm grenades used in launchers are not inter-changeable. Hand grenades have a 4-second delay. A number of grenades are described below. Each column is described as follows:

Cost: Price in American Dollars ($) for a case of **six** grenades.
Wgt: Weight per grenade in grams (g) or kilograms (kg).
Damage: The damage a weapon inflicts.

Weapon	Cost per Case	Wgt	Damage
M1 Smoke HC	90	0.5	Special; see description
M2 Riot Agent	150	0.5	Special; see description
M3 Stun	180	0.5	2D6 stun; see description
M4 Fragmentation	180	0.5	5D6/3D6/1D6; see description
M5 High Explosive	180	0.5	5D6; reduce armour by 10
M6 Airburst	180	0.5	5D6/3D6/1D6; see description



M1 Smoke HC Grenade – The M1 smoke grenade creates a thick cloud of coloured smoke six metre in radius, centreed on the location of the grenade. This smoke imposes a –2 DM on all attacks within or through the cloud (doubled for laser weapons). Smoke dissipates in 1D6x3 rounds, although high winds and other extreme weather can sharply reduce this time.

M2 Riot Agent Grenade – The M2 riot agent grenade creates a cloud of fentanyl-derivative gas six metres in radius, centreed on the location of the grenade. This fentanyl-analog will typically incapacitate anyone within the cloud that is not wearing breathing equipment. Victims must make a Very Difficult (-4) Endurance roll to avoid being knocked out for 1D6x10 minutes. Success means the victim suffers a -1 on all actions, but is otherwise free to act. A roll of double-2 indicates serious injury - the victim suffers 2D6+2 damage. The gas will dissipate in 1D6x3 rounds, although high winds and other extreme weather can sharply reduce this time.

M3 Stun Grenade – The M3 stun grenade is non-lethal and does not inflict normal damage. A character within six metres of a stun grenade detonation must make an Endurance check with a negative DM equal to the damage (after armour is subtracted). If this Endurance check is failed the character is incapacitated for 1-3 rounds. If the Endurance check is successful, the character is unaffected by the weapon and the stun damage is ignored.

M4 Fragmentation Grenade – A core of high explosive is surrounded by a layer of notched wire which fragments on detonation. The damage from fragmentation grenades decreases with distance from the blast.

Distance	Damage
3 metres	5D6
6 metres	3D6
9 metres	1D6

M5 High Explosive Grenade – This is only available as a 30mm round for a grenade launcher and cannot be hand thrown. The M5 HEAP (High Explosive Armour Piercing) grenade is able to penetrate light armour and can inflict serious damage against lightly armoured and civilian vehicles as well as bunkers, buildings and fortifications. It will reduce the target's Armour points by 10, and then inflict 5D6 damage. It has a blast radius of 5m and anybody within that radius will suffer 2D6 damage. Fired from the G6 Grenade Launcher, this grenade is laser targeted and will try to home in on any target designated by the firer using the G6's integral laser painter. This provides a +1 to hit.

M6 Fragmentation Airburst Grenade - This is only available as a 30mm round for a grenade launcher and cannot be hand thrown. The M6 has similar properties to the M4 Fragmentation grenade, but it can be commanded to detonate in the air above a target, once the firer has established range to the target using the G6's laser designator. This negates the defender's -2 for shooting from cover, and negates hard and total cover for a character who considers himself safe.

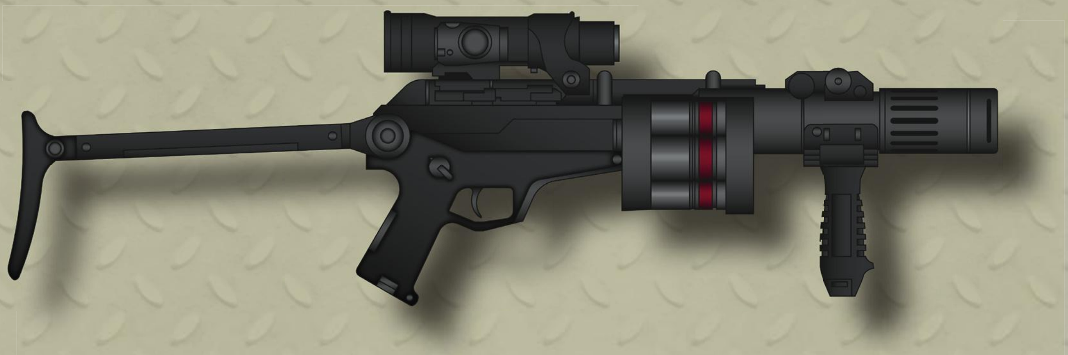
HEAVY WEAPONS

Heavy weapons are larger, man-portable weapons that cause extreme property damage. The table below lists the heavy weapons commonly available in a **HOSTILE** campaign. Each column is described as follows:

Cost: Price in American dollars ($).
Wgt: Weight kilograms (kg).
RoF: Rate of Fire. The number of rounds that may be fired during a significant action in the format: Single Shot / Auto
Range: The range category for this weapon.
Damage: The damage a weapon inflicts.
Recoil: Lists if the weapon has recoil when fired.

Maverick G6 Grenade Launcher [30mm]

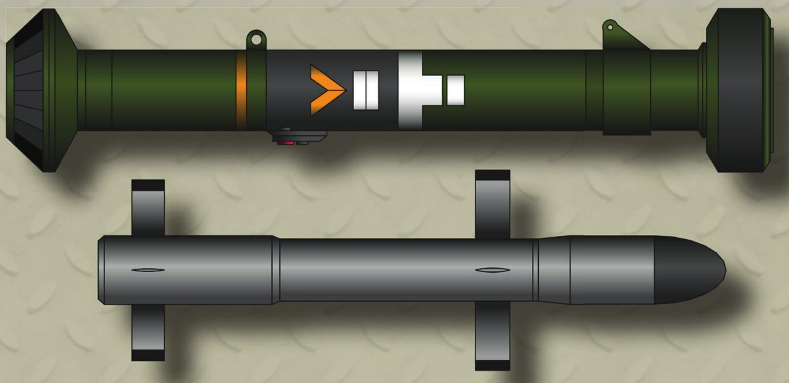
Cost ($)	Wgt (Kg)	ROF	Range	Dmg	Recoil	Lgth (cm)	Rds
800	4.5	1	assault	varies	6+	80	6



This rocket-assisted multi-purpose 30mm grenade launcher is a semi-automatic weapon firing one grenade for each pull of the trigger. It has a revolving six-shot magazine forward of the trigger assembly, a retractable stock and forward grip under the barrel. It takes two minor actions to reload a grenade launcher. Grenades for the G6 grenade launcher are not interchangeable with hand-held grenades. The weapon fires from a closed bolt, gas operated mechanism and its scope features an integrated laser rangefinder and a ballistic computer, which calculates where the grenade will land and will also guide the grenade (when using M5 laser-guided HE grenades) or sets them to explode at a certain distance (when using M6 fragmentation airburst grenades).

M9 Eagle-Eye Disposable Missile

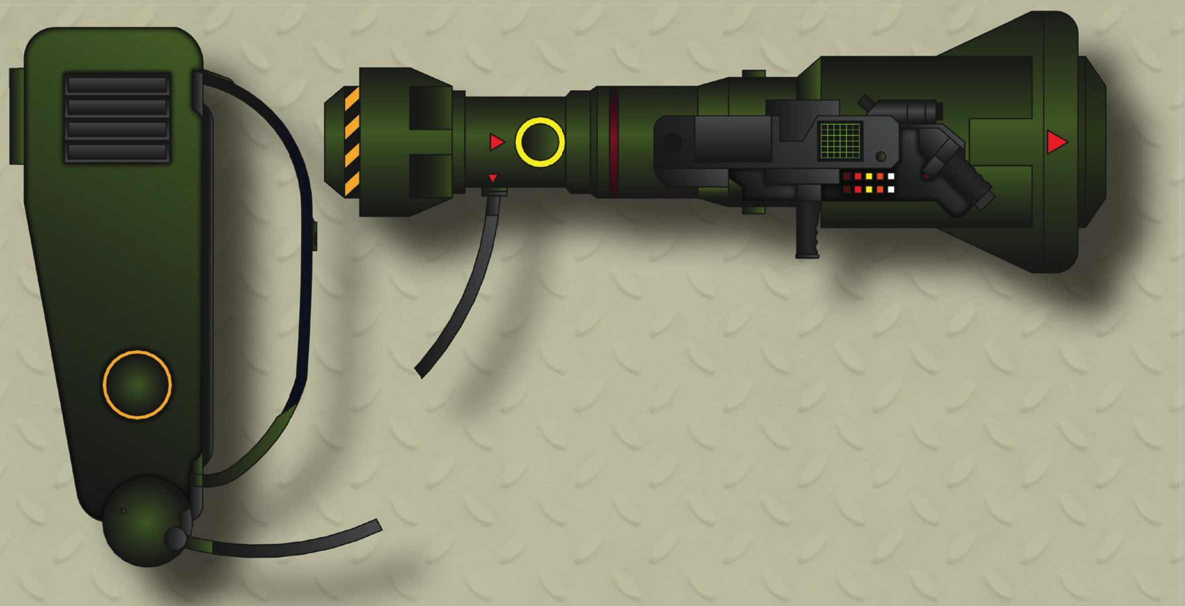
Cost ($)	Wgt (Kg)	ROF	Range	Dmg	Recoil	Lgth (cm)	Rds
2,000	3.2	1	rocket	8D6	-	64/90	1



The M9 is a disposable missile that is easily carried in the field by a single infantryman. When carried it is 3.2kg in weight and only 64cm long, telescoping out to 90cm for use. Prep to fire requires four combat rounds in total. To counteract the recoil of the weapon, the missile launcher channels exhaust backwards in an explosive back blast. Anyone up to 2 metre behind a rocket launcher when it fires takes 3D6 damage from the exhaust. The M9 Eagle-Eye contains a High Explosive Anti-Tank warhead for the destruction of light and medium armour and is guided on to the target by an on-board infra-red guidance system. This provides a +3 DM to hit unless the guidance computer cannot lock on, is confused by decoys or has no IR signature to identify (such as with a bunker or supply dump). It is a fire-and-forget missile. The M9 will *reduce the target's armour by 16 points*, and then inflict 8D6 damage. It has a blast radius of 6m and anybody caught within that radius will suffer 2D6 damage.

Zenith XM4 40MW ATPG (Advanced Tactical Plasma Gun)

Cost ($)	Wgt (Kg)	ROF	Range	Dmg	Recoil	Lgth (cm)	Rds
20,000	15	1	rifle	10D6	8+	100	38



The XM4 is an experimental man-portable plasma weapon currently under-going trials with American forces. It is designed to provide concerted and devastating direct fire and anti-tank support on the battlefield. In appearance it resembles a shoulder-launched guided missile launcher, but it is connected to a portable fuel cell carried by a second crewman via a power cable. The Advanced Tactical Plasma Gun is a 40 MW phased plasma weapon firing cadmium-telluride pellets from a 38 round hopper. The onboard laser powers the fast-discharge generator which then super-heats the fuel pellet to a plasma state. This plasma is focussed through a magnetic field along the gun's barrel. The ATPG can fire once every other combat round due to the weapon's need to initiate a cool-down procedure, and then power-up for the next shot.

I volunteered for duty on the XM4 Plasma Gun when I saw it up close in combat trials. For a grunt like me, who's used to seeing targets explode or catch fire, the XM4 blew my mind. When the operator got it onto a light armoured vehicle on the range, that thing flipped over, caught fire, melted and then exploded! I stuck my hand straight in the air when gunny asked for volunteers.

Lance Corporal Leo Kelly, Weapons Platoon, Charlie Company, 1/8 Marines

WAGES & PRICES – 2250

SPACER MONTHLY SALARIES

Captain	$7,000
First Officer	$6,000
Second Officer	$5,000
Third Officer	$4,000
Fourth Officer	$3,000
Crewman	$3,000

Salaries for starship crews vary between starlines, from monthly salaries as listed here, to nominal monthly payments of $1,000 with hefty bonuses added on completion of the mission. These bonuses are shares. See **Crew Expendable** for more information.

HOSTILE CAREER MONTHLY SALARIES

Career	Salary Base	Multiplier
Android	-	-
Corporate Agent	$3,200	$600
Corporate Executive	$10,000	$1,000
Colonist	$3,500	$500
Commercial Spacer †	$3,000	$1,000
Marine Enlisted †	$1,000	$500
Marine Officer †	$3,000	$1,200
Marshal	$4,000	$500
Military Spacer Enlisted†	$1,000	$500
Military Spacer Officer†	$3,000	$1,200
Physician	$4,500	$4,000
Ranger	$3,000	$200
Rogue	$1,800	$1,800
Roughneck	$4,500	$800
Scientist	$2,600	$600
Survey Scout	$4,500	$800
Technician	$3,000	$200

Multiply career rank by multiplier, then add total to salary base.
† = Cost of Living is usually free

FOOD & TRAVEL COSTS

Coffee, Red Stone	$2
Beer, Red Dragon	$3
Beer, L4 Lager	$2
Meal (fast food/breakfast)	$6
Meal (restaurant)	$30
Meal (fine dining)	$120
Hotel Capsule/Night	$15
Hotel Business/Night	$120
Hotel Luxury/Night	$400
City Bus	$4
Taxi/Autocab	$20
Hovercar Airtaxi	$200
Flight, Regional	$350
Flight, Global	$1,200
Flight, Into Orbit	$2,000
Flight, Hyperspace	$8,000
Maglev (commute)	$10
Maglev (regional)	$50

COST OF LIVING

Subsistence Living
Food $100 per month; Housing Rent $300 per month; Total $400
Decent Living
Food $250 per month; Housing Rent $850 per month; Total $1,100
Luxury Living
Food $1,000 per month; Housing Rent $5,000 per month; Total $6,000 + $100 x Soc

OTHER COSTS

Videofone (Global)	$1	Executive Bodyguard/day	$2,500
FTL Message (50 characters)	$2,500	Private Investigator/hr	$150
Bail, Minor	$2,000	Firearms Range/hr	$100
Bail, Major	$20,000	High-End Escort Service/hr	$300
Vacc Suit Valet	$140	Street Prostitute/trick	$30
Forged Document	$1-6,000	General Repair Shop rate/hr	$150
Software Jockey/hack	$1-6,000	Equipment Rental/day	1% ††
Housekeeper/month †	$1,200	Secure Vault Rental/month	$100
Professional Consultant/hr	$500	Personal Assistant/month †	$3,000
Medical Care per Point	$200	Attorney/hour	$250
Medical Surgical Procedure	$10,000	Security Guard/day	$250
Surgical Face Change	$5,000	Bribery, "Look the Other Way"	$100
Organ Replacement	$2,000	Bribery, Minor Felony	$500
Limo Rental/hr	$250	Bribery, Serious Felony	$5,000

† = Cost of Living is usually free †† = Percentage of full retail value

ADVICE FOR MANAGERS

7

Welcome to the dark and menacing roleplaying environment of HOSTILE. In classic sci-fi roleplaying settings, it is often de rigueur to state that your character can be anyone, that you can go anywhere and do anything. 'The only limit is imagination'. Here, in our dark, gritty near future we are instead constrained - in many ways it is the modern world, with corporations, contracts, schedules and regulations. There are no princesses to be saved or alien uprisings, neither are there any galactic conspiracies or elite aristocracies. But this setting is not about the new, alien and exotic, it is essentially about the mundane and the familiar, a setting style that director Ridley Scott once described as 'retro-industrial'.

So what exactly do player-characters do in this setting? In essence, RPG groups can either work, fight or explore.

TYPES OF PLAY

Work

A man is a worker. If he isn't - then he's nothing.

Nic Perdue, tool-pusher for Havermeyer

Interstellar transport is not like boarding a modern transcontinental 787 and sipping Martini's at 35,000 feet whilst surfing the Net. Our interstellar colonies are more like Alaska than Acapulco and, using this analogy, transport out to these hostile planets is achieved on-board industrial ships, slow cargo vessels and mobile mining rigs. You won't see any tourists or thrill-seekers out here, just men and women working to contract. It is well paid work because it is dangerous; suit leaks, hypersleep pod failures, equipment failures, radiation flares, super-volcanoes, alien wildlife attacks, explosive depressurization ... the list of ways to die is almost endless. Only the best, the toughest and the most resourceful people are hired to work out here. And that sounds like the player characters to me.

Of course the players want some variety, they don't want to be operating a blast furnace on a vacuum moon for three months, despite the high pay and the risks involved! Instead, working characters should serve as troubleshooters. They may be independents, working for a small consulting firm that gains regular contracts with the big interstellar corporations. Or they might be employed in-house for Makita Corporation or Tharsis (for example), moving from subsidiary to subsidiary, work site to work site, solving difficult problems for their bosses. What kind of 'trouble' are we shooting? Forget balancing the mine's accounts or conducting a surprise audit, the troubleshooters are instead called to deal quickly with dangerous and/or unusual problems. Here is a quick list of possible adventure seeds:

- A colony transmitter has gone down. Find out why and then get it up and running again.
- Attacks on workers by alien wildlife have suddenly begun, find out why and stop the attacks.
- One of the workers has gone AWOL with weapons and detonators. Find him before he causes any trouble.
- Miners at a small test rig have all come down with some mystery illness. Take a doctor out there to find out what it is and why it has stopped production.
- An 'unlucky' decommissioned ship in orbit requires boosting to a higher orbit and the reactor safely shutting down before it can be scrapped. Go and do the job. Unknown to the player characters, however, a 'hyperthing' is trapped on-board and will attempt to send each character insane.

If troubleshooting does not whet the players' appetites, but massive starships do, then you might want to consider running a shipping game. The PCs are the crew of an interstellar transport or tug that is contracted to haul X to Y, while on the way encountering problem Z.

As already discussed, interstellar travel is routine but still dangerous, akin to crewing a modern container ship or bulk carrier. Of course, just like the troubleshooters, there won't be any routine cargoes or for that matter any routine trips. Here is a quick list of possible adventure seeds:

- Haul a set of fusion reactors to three different installations. One of them is improperly loaded and begins to go critical - the ship's AI computer wakes you from hypersleep with just enough time to panic.

- Ship a thousand tons of titanium building struts to a start-up colony. On arrival there are no colonists. Investigate.
- Intercept a distress signal from an unsurveyed moon. You must investigate the signal, or fall foul of ICO regulations.
- Transport a science crew with all their kit and vehicles back to Earth from the Outer Rim. Unfortunately, an unauthorized alien sample, placed in stasis by the lead scientist, escapes and starts killing crew and passengers alike, one by one.
- You are shipping twenty Elite passengers out in hypersleep to join an established colony. Unfortunately, two of them are clones from the Munich Uprising and they attempt a hijacking the moment they are brought out of hypersleep.

You might notice that all of these adventure seeds are fairly familiar RPG scenarios, but they are set within the environment of space transport, oil drilling, mining and colony support. A number of them could just as easily be performed by a heavily armed squad of US Marines ... though the odds would be tipped dramatically in favour of the marines.

Fight

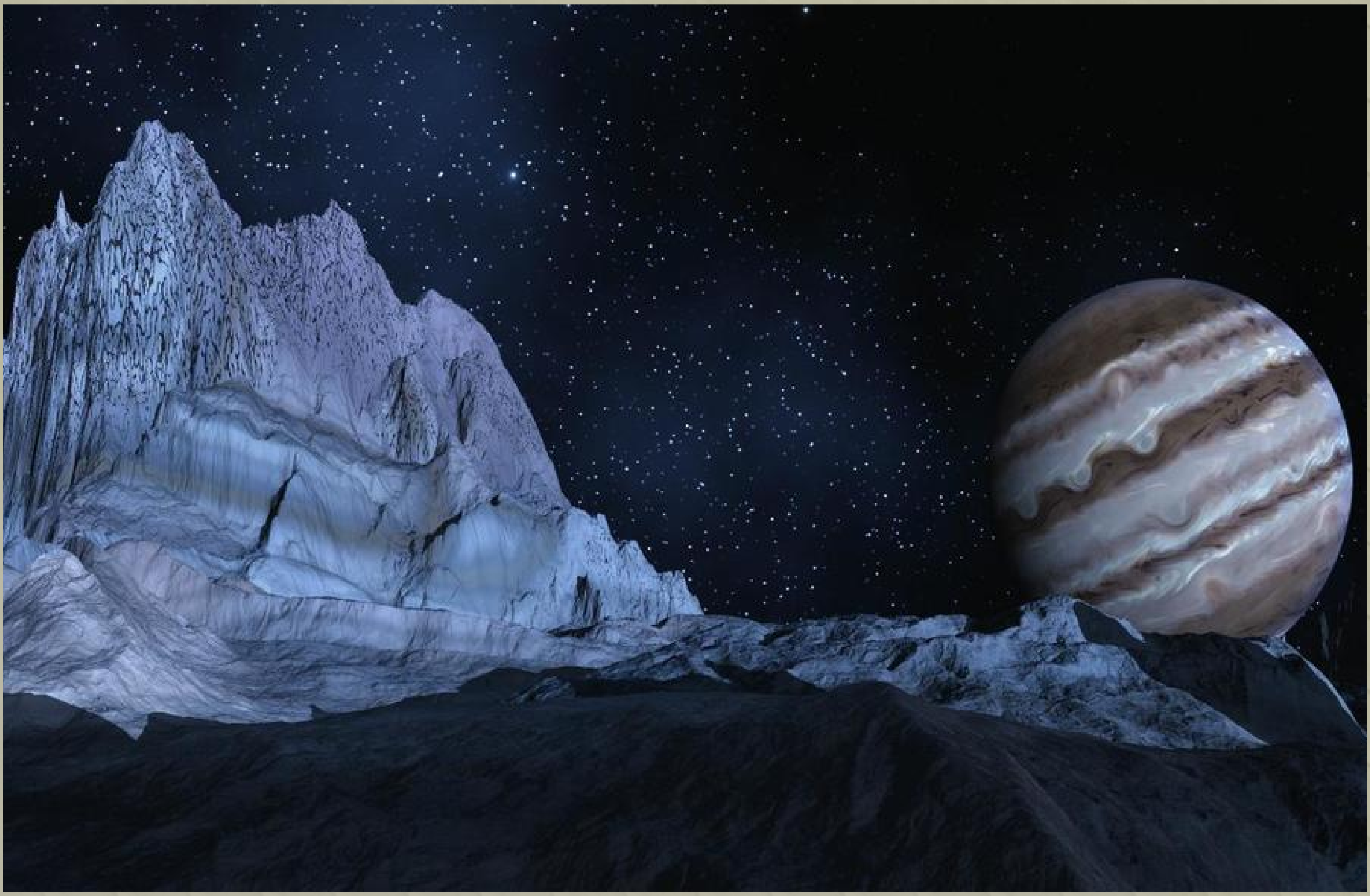
> All hell broke loose. I dived over this log and I peeked from behind it. I hear one of those guys with me screaming at the top of his lungs. His leg is all blown to shit. The dirt is popping around him. Snipers are trying to kill him. Three other fellas are up front and they're all laying in a shallow stream, face down.
>
> Lance Corporal 'Jeffy' Jefferson, India Company, 3rd Battalion, 7th Marine Regiment

There will be plenty of fights - combats of varying intensities - in many roleplaying adventures, whether the player characters are workers or explorers. For some teams of PCs, however, combat is a profession. In the **HOSTILE** setting and in the American Sector in particular, these tooled up, combat proficient interstellar soldiers will most likely be either United States Marines, or Private Military Contractors (PMCs), who act essentially as modern-day mercenaries. Nearly everyone of these scenarios will feature some type of armed conflict, sometimes involving humans, and at other times involving the fierce and unpredictable predators of an alien eco-system.

Colonial populations are small; non can afford the manpower or equipment for a standing army or air force, and to be honest, no-one could foresee a time when such units would ever be useful. Instead, PMCs and US Marines stand by within the Core Worlds to respond to aggression on the off-world colonies. There may be insurrections, hijackings, civil wars, coups and the ever-present threat from overly aggressive alien predators.

Planning such missions can be tricky. Because players have created military characters that possess plenty of military skills, those characters can only really shine in combat situations. Most adventures will therefore require at least one (and preferably several) gunfights or close-combat situations. There may be some exploration, problem solving and social interaction involved - but not too much - and it should always lead on to combat.

What kinds of conflicts can these marines and mercenaries expect to encounter? Most encounters can be easily classified as either a Stand-Up Fight (against armed and aggressive humans) or as a Bug-Hunt (against one or more aggressive, predatory alien creatures). Here is a quick list of possible adventure seeds:



- A commercial vessel has been hijacked by a heavily armed gang that intends to fly it into the local colony world unless they are given their own executive transport ship and $100 million.
- A Corporation is facing a rebellion amongst the workers with one of its mining colonies. The rebels have seized several installations.
- Resource scouts on a colony world are mysteriously disappearing in the foothills of a mountain range.
- A guerrilla army has seized control of the starport on a colony world torn by civil war.
- Giant predatory insects have emerged from long-term hibernation to begin hunting and eating loggers and oil workers from a wilderness outpost.

The military team will have to be self-sufficient, equipped not just with weaponry and the vehicles it needs, but also with medical equipment and supplies. Perhaps the most suitable type of US marine unit for this type of setting is Force Recon, the marines' own special forces reconnaissance section. Small, independent, well trained and prepared to investigate ahead of any major conflict, Force Recon missions would make perfect RPG scenarios. PMCs, contractors - or mercenaries - are used to supplement military forces, often on temporary contracts. In **HOSTILE** they can act for a body, such as a corporation, Non-Governmental Organization or colony that has no easy access to military firepower. A PMC is a company that will require a legal team, managers, logistical experts, accounts and medical staff, etc. On missions, the armed contractors themselves, may be accompanied into the fray by a project manager. This corporate representative serves in this capacity almost as an infantry officer, albeit one with a limited budget, limited resources and the needs of the client uppermost in his or her mind!

Simplifying Squad Combat

To prevent the referee making all of the individual combat rolls for Marine NPCs during a game, **HOSTILE** suggests using a truncated combat system.

The referee rolls 1D6 for each NPC Marine in the squad involved in the firefight (players will roll for their own characters). Any result of ‘6’ is a hit. He can roll all those dice at the same time and he doesn’t even have to make this roll in front of the players. Likewise, it may move the action on dramatically if the referee makes a simple saving throw for each Marine who is on the end of enemy fire or an exomorph attack. Roll **5+** to remain unwounded and unscathed. These simple rolls can be elaborated on if needed, adding an extra D6 if an NPC is armed with a squad machinegun, for example. Likewise, when the enemy attack, NPCs who are out in the open, unarmed or likewise vulnerable should have that saving throw increased to **7+** or even **9+**, for example.

Controlling the Squad

Long time roleplayer and US Army Private First Class (E-3) Conrad Deitrick has summed up the way in which rank actually works in the field for a small unit.

> I’m an E-3, a PFC. My team leader is a Specialist E-4. My squad leader is an E-5, a sergeant. I consider both to be my buddies. They’ve got more experience than me; I trust their judgement often more than I trust mine, but they’re friends and we’re in everything together. I’ve got ‘buddies’ who are Staff Sergeants, E-6. Its not basic training; we’re not talking about Drill Sergeants. Squad leader sergeants don’t yell all the time in the regular army. They’re too busy looking out for the guys in their squad. You work together and live together, you are friends and battle buddies.

There are a lot of NPCs in the game. Even if you have five players, you could still have five NPCs tagging along in the rest of the squad. If you only have a couple of players then the problem is even worse. To prevent the referee making most of the rolls in a game, and desperately trying to work out what all the squad-members are up to, **HOSTILE** simplifies the squad system.

Two players must take on the squad leader and team leader roles; each is in command of half of the squad (what we call a team). This team list does not change from game to game unless they players decide it should be changed. The team members are controlled by the referee but to make his job easier, they will generally follow the team leader, do as they are ordered and stick together. A team will never willingly split up, it is the smallest unit in the field and the referee will make combat rolls for the team as a whole (although the team leader will of course make his own dice rolls).

Unless the plot or the referee dictates otherwise, the team members are docile and obedient soldiers following the team leader around much as retainers did in one or two of the ‘Old School’ roleplaying games. Where there are enough players to take up other roles, these grunts can operate freely just as the squad and team leaders do. As player characters they make their own rolls and have an equal part in decision-making, these PC squad-members don’t have a team following them around, however!

Murphy’s Laws of COMBAT

These long standing military adages seem to fit the screwed up, malign and plain hostile nature of this setting ... The players might want to read these, and try to remember that the referee has read them too!

1. The more stupid the leader is, the more important missions he is ordered to carry out.
2. No matter which way you have to march, its always uphill.
3. Things that must be together to work usually can’t be shipped together.
4. The worse the weather, the more you are required to be out in it.
5. Radios will fail as soon as you desperately need fire support.
6. No plan survives the first contact intact.
7. If you are forward of your position the artillery will always fall short.
8. Never share a fox hole with anyone braver than you.
9. Anything you do can get you shot. Including doing nothing
10. The weight of all of your equipment is proportional to the length of the time you have been carrying it.
11. The most dangerous thing in the world is a Second Lieutenant with a map and a compass.
12. Never stand when you can sit, never sit when you can lie down, never stay awake when you can sleep.
13. If you can’t remember, the claymore is pointed at you.
14. If your attack is going well, you have walked into an ambush.
15. The enemy diversion you have been ignoring will be the main attack.
16. Don’t draw fire, it irritates the people around you.
17. If the enemy is in range, so are you.
18. The easy way is always booby-trapped.
19. Try to look unimportant, the enemy may be low on ammo.
20. Professionals are predictable, it’s the amateurs that are dangerous.
21. The enemy only attacks on one of two occasions: When you’re ready for them, and when you’re not ready for them.
22. Teamwork is essential; it gives the enemy someone else to shoot at.
23. Combat will occur on the ground between two adjoining maps.
24. The enemy never watches until you make a mistake.
25. If you ever want an officer, try to catch some sleep

Explore

`I had an ambition not just to go farther than anyone had ever been before, but to go as far as it was humanly possible to go.`

`Krista-Sue Mortenson, Team Leader, Beta Team, Voroncovo Resource Unit`

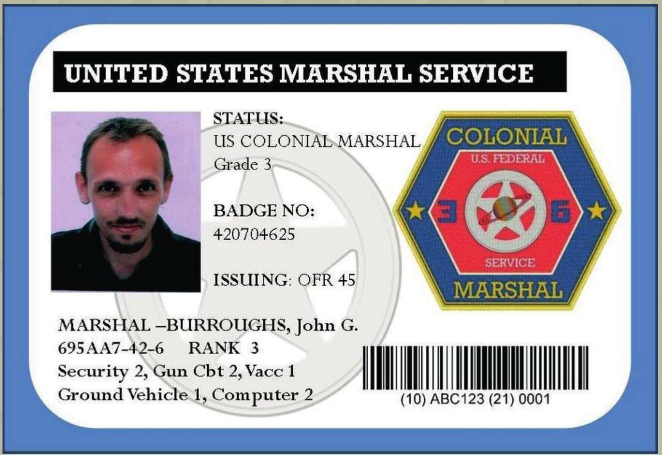
The third major campaign type is that of exploration. This is a setting of unknowns and of unexplored regions. The extraction zones are huge areas of space where mining corporations and oil drillers have begun to look for resources and to set up outposts - but there has been no systematic program of survey or exploration. Player characters can form a team of resource scouts that are experts in planetology, geology and the space sciences that look for viable resources. They are the employees of some large corporation, pioneering the industrialization and development of interstellar space for the good of Earth - and for the bottom line of their company's accounts.

Resource scouts are tough, independent spacers, able to take care of themselves and thrive in a dangerous alien environment with the knowledge that no-one will come to their aid if things go wrong. They are on their own. Of course, this is roleplaying, and things *will* go wrong - frequently! The type of characters included in the teams can be quite varied, as there are is a host of different skills required. Some of the player characters should be resource scouts, trained in spacecraft operations and in space sciences, but there might be need for a miner or a technician and perhaps even a 'boss' or corporate rep - although that role might be better occupied by a Non-Player Character. Of course the team will need a ship, most likely 2,000 ton resource exploration vessel of the Pandora class. Here is a quick list of possible adventure seeds:

- The survey planet is about to be catastrophically struck by a large asteroid.
- Sensors suggest that lucrative mineral deposits lay under the ice. While drilling down, the PCs awaken ferocious hibernating predators.
- The PCs ship is damaged during re-entry and crash-lands. It will take a supreme effort of engineering and ingenuity to get it back into orbit. Meanwhile a killer storm is approaching.
- At the bottom of a great impact crater sits the potential for immense mineral wealth. The only problem is that another team of resource scouts from a rival corporation have gotten there first. How is this going to be resolved? Chances are that any deal struck will be reneged upon by the other team.
- During a prospecting expedition, mineral geodes are found which lead the team to a network of (what look like) lava tunnels. Inside there are mineral veins to be mapped, but also a mysterious alien creature that intends to wipe them all out after stealing a crucial part of their ship's drive. The creature can melt its way through rock, the tunnels are its lair and the geodes are its eggs.

There is a hierarchy amongst the team-members, there has to be on any spacecraft, but generally, seniority is based on fields of expertise rather than a military-style rank structure. This is eminently suitable for roleplaying where all the players have an equal say and a valid part to play in decision-making and mission tasks. Yes, there has to be a 'captain' but he or she will be played by a player who has no sway over the others; decisions, just as they would be onboard the exploration ship, will be debated in the briefing room or on the bridge, and the most logical and popular measure will be followed. This is how RPGs work. In real life, however, the captain would have the final say, after taking on board the comments of the relevant crewmen. Remember though, that the body footing the bill is a resource hungry corporation. Scouts are not NASA scientists, they look for profit, for treasure and exploitable resources. Their hefty bonuses depend on bringing home the bacon.

Whilst player characters working as miners, or marines or commercial ship crews will have a good idea of what they are faced with, resource scouts are generally left in the dark. Exploration *scenarios* are a bit of a bluff: the referee will assign them a world and perhaps some more detailed goal (such as prospect *that* crater, or assess the viability of mining *that* gas giant moon), but that is not actually the real adventure. Inevitably something else will get in the way: a dangerous natural phenomenon, alien creatures, rival corporations, crippling mechanical failure and so on … The excitement comes in being utterly alone in a hostile environment, faced with terrible danger and even worse odds of survival. Payday bonuses for corporate resource scouts must be big!


UNITED STATES MARSHAL SERVICE

STATUS:
US COLONIAL MARSHAL
Grade 3

BADGE NO:
420704625

ISSUING: OFR 45

MARSHAL –BURROUGHS, John G.
695AA7-42-6 RANK 3
Security 2, Gun Cbt 2, Vacc 1
Ground Vehicle 1, Computer 2

(10) ABC123 (21) 0001

COLONIAL
U.S. FEDERAL
3
6
SERVICE
MARSHAL

DESCRIBING THE SETTING

When we referee a roleplaying session, laying out a particular scene for a group of players, we typically draw on our own experiences and the images and situations that we have read about, seen in artwork or in movies. Of course the same applies when playing **HOSTILE**, but some movies do not sit well with the gritty, hard-nosed and dark setting that this game tries to create.

Darkness

The stations, outposts, colonies and starship interiors are dark. This is a metaphor for the game world as a whole, it increases the feeling of threat and mystery, but realistically it probably doesn't reflect how a near future society would work. With fusion power on tap, electricity for light fittings is cheap! Yet the dim lighting and darkness is crucial to the setting.

Industrial Environment

The corridors, control rooms, engineering spaces, airlocks and other locations must seem familiar and realistic. They are well-used work-spaces that are littered with fittings and fixtures that mix the modern industrial with the futuristic. Ridley Scott's vision for Alien was a direct reaction to the pristine interiors and gleaming future technology of Kubrick's 2001: A Space Odyssey. It began a trend in SF movies that showed the utilitarianism of space travel, how humans might *really* inhabit starships and how they will use them. They are forced to work within cramped working environments, squeezed in between functional and bulky technology. The habits and vices of human life springing up in the cracks between the machines. The form of these interiors follows from their function, and not the other way around, There are dozens of these retro-industrial interior details that add flavour to the setting:

Sounds

- Sound of cycling pumps
- Sound of air circulation system; inside a breathing, wheezing monster
- Sound of old-style computers booting and processing data: clicks, whirrs
- Sounds of metal framework heaving and stretching

- Calm announcements by the female-voiced system mainframe

Clutter

- Fire extinguishers
- Large fold-out tool-kits
- Old-style 1970s wall-phones with handsets and metal-link handset cords
- Desk or wall-mounted videophones
- Old style green-screen computer terminals with clunky keyboards
- Fat plastic rocker switches
- Coffee cups
- Yellow Post-It® notes
- Vacc suits in plexiglass wall-lockers
- Personal effects: playing cards, Playboy magazines, drinking bird toys, etc.
- Steam or inert gasses venting into the area
- Self-service Kinako™ Corporation Auto-Chef, with labelled aluminium food-lockers
- Large and obvious handles, buttons and levers – in red, with warning signs
- Winches, wheeled access platforms, pallet trucks, and other equipment
- Technical manuals or handbooks left lying around
- Clipboard with Fisher AG7 Retractable Space-Pen and checklists
- Metal crates, plastic barrels, equipment cases, stacks of pipes or polymer sheets
- Control units hanging from a cable near the machinery they control
- Trolleys for equipment transport, or for holding a 'portable' terminal

Wall & Ceiling Fittings

- Ceiling or wall-mounted CRT monitors displaying data
- Exposed pipework in the walls or ceilings
- Ladders leading up to suspended gantries
- Tightly-packed control areas and equipment bays
- Corridors of hexagonal or octagonal cross-section
- Overhead equipment junctions
- Large blast doors and bulkhead doors
- Banks of lit buttons – we know not what they signify!
- Machine bays filled with tanks, pipes and valves
- Irregular levels, gantries, mezzanines and walkways
- Chains and hooks hanging from overhead winches on ceiling tracks
- Wall or floor panels removed for inspection or maintenance
- Ceiling, tunnel or wall fans (typically back-lit for a true Ridley Scott effect)
- Cables snaking across surfaces or along walls or ceilings

Surfaces

- Metal grille flooring
- Industrial non-slip metal flooring
- White areas, with white padded walls, for living areas
- Square panelled hard-wearing polymer flooring
- Padded wall sections
- Padded benches and seating areas
- More padded and contoured walls
- Very low ceilings in some areas
- Dirt, smears, oil stains, scuffs, scratches, dents, faded signage, peeling paint

Signage

- Common industrial signage ('semiotics')
- Areas of yellow and black warning signage
- Large stencilled numbers/letters

identifying doors, levels or corridors

- Coloured 'follow me' lines on the floor
- Signs that are bilingual - English and Japanese kanji

Lighting Effects

- Contoured and paneled white ceiling units with integral lighting strips
- Dark areas leading into brightly-lit white living spaces
- Lights that come on as you enter a section
- That flickering neon strip-light that never stays fixed
- Lighting: up-lit, backlit and sometimes lit from above, varies by area
- Lights – blue, red, yellow, amber and white
- Suspended and backlit information boards
- Rotating emergency strobe lights
- Flood-lights on towers (external)

Interesting Locations

- Baggage reclaim areas at starports
- Airlocks
- Industrial cargo airlock
- Huge industrial caged elevators
- Suspended gantries and walkways
- Mess halls
- Washrooms
- Rows of equipment lockers
- Control room
- Utility spaces at the top and bottom of stairs
- Ladders between decks
- Maintenance corridor filled with access hatches
- Dormitory level
- External weather station
- External ffamiliar-looking satellite dishes and microwave towers
- Open plan office space
- Lounge with a view
- Waiting area with seating, videophone and vending machine
- Slope down
- Stairs down with hand-rails
- Fire-fighting equipment bay
- Laundry
- Kitchen with aluminum work surfaces
- Security desk with monitors
- Life support plant, filled with pipework, generators and huge tanks of 'stuff'
- Corridors
- Corridor junctions, with wall-phones, cameras and prominent signage
- Lobbies, foyers, and 'circulation spaces'.
- Cargo hold, warehouse, freight-locker, ISO Standard Containers
- Office with window overlooking cargo hold, hanger, passenger terminal etc.
- Loading area, with containers, forklift, pallet trucks, reachstacker, etc.
- Office and stateroom combined
- Bunkroom with living and cooking quarters shared in same space
- Hydroponics area, with ceiling mounted controls and equipment bays
- Command center with wall, desk and ceiling-mounted CRT screens
- Infirmary, white, with overhead and wall-mounted equipment

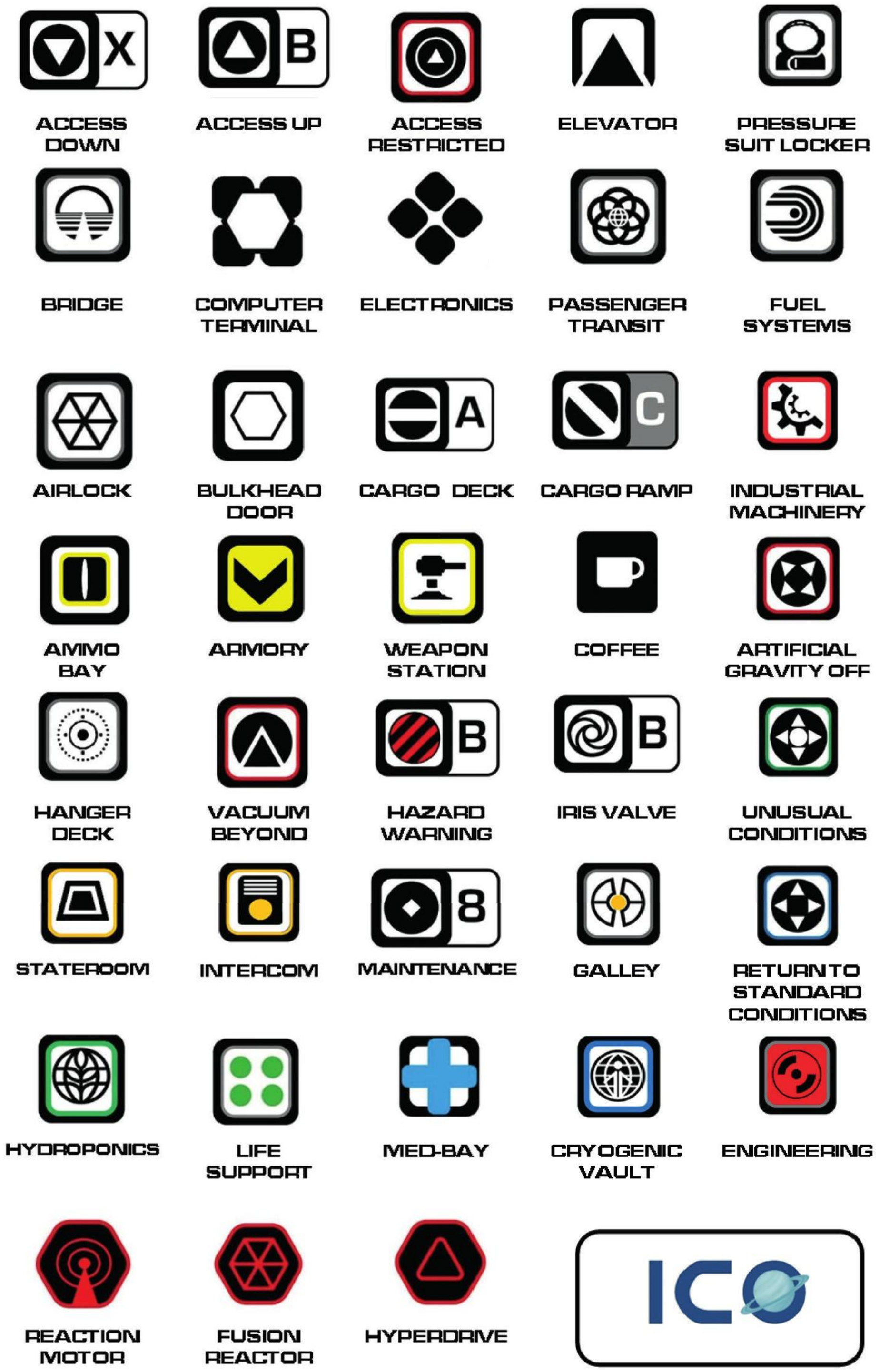
Threatening and Grim

The human setting is generally a grim and threatening place, not simply from a physical stand-point but also psychologically. Pessimism rules over optimism, profits usually come before sentiment, politics and corporate development pay no attention to the needs of humans caught up in the fray and what can go wrong – `will go wrong`. Of course this bleak vision reminds us of a cyberpunk dystopia, and it is much the same, but without all of the cybernetics, street violence and high-tech virtual worlds. Game elements can be dropped in to remind players of this. The names of people, places and starships can seem ominous, threatening or simply bland. Ships called Cerberus or Cyclops, for example, seem to fit this vision of the future much better than would Discovery, King Richard, or Fortuna. Many of the colony names in the **HOSTILE** setting are taken from real-life mines and mining towns in Canada and the American West.

Corporations are brought to the fore to put a price on everything, from resources to scientific breakthroughs – everything has a cost index. Conspiracies, secret agendas, special operations and corporate espionage were a part of this late-70s genre from the beginning, and form a trope that could easily be woven into any **HOSTILE** scenario. Overuse of conspiracies and agendas, of course, will soon turn a cool plot twist into a too-predictable stereotype. Be careful. Don't chuck in an android secret agent into every game!

ICO SEMIOTICS

These simple and colorful logos act as ship-board sign-posts, leading crewmen to a particular location, or providing high visibility warnings. Most are mounted above, on, or next to, doorways or on walls (close to relevant equipment). Watch out for color coding; in general, yellow means explosives or weaponry, gray means technical equipment, light green means life support, blue refers to medical areas and red signifies danger. Black and red hexagons are reserved for engineering compartments.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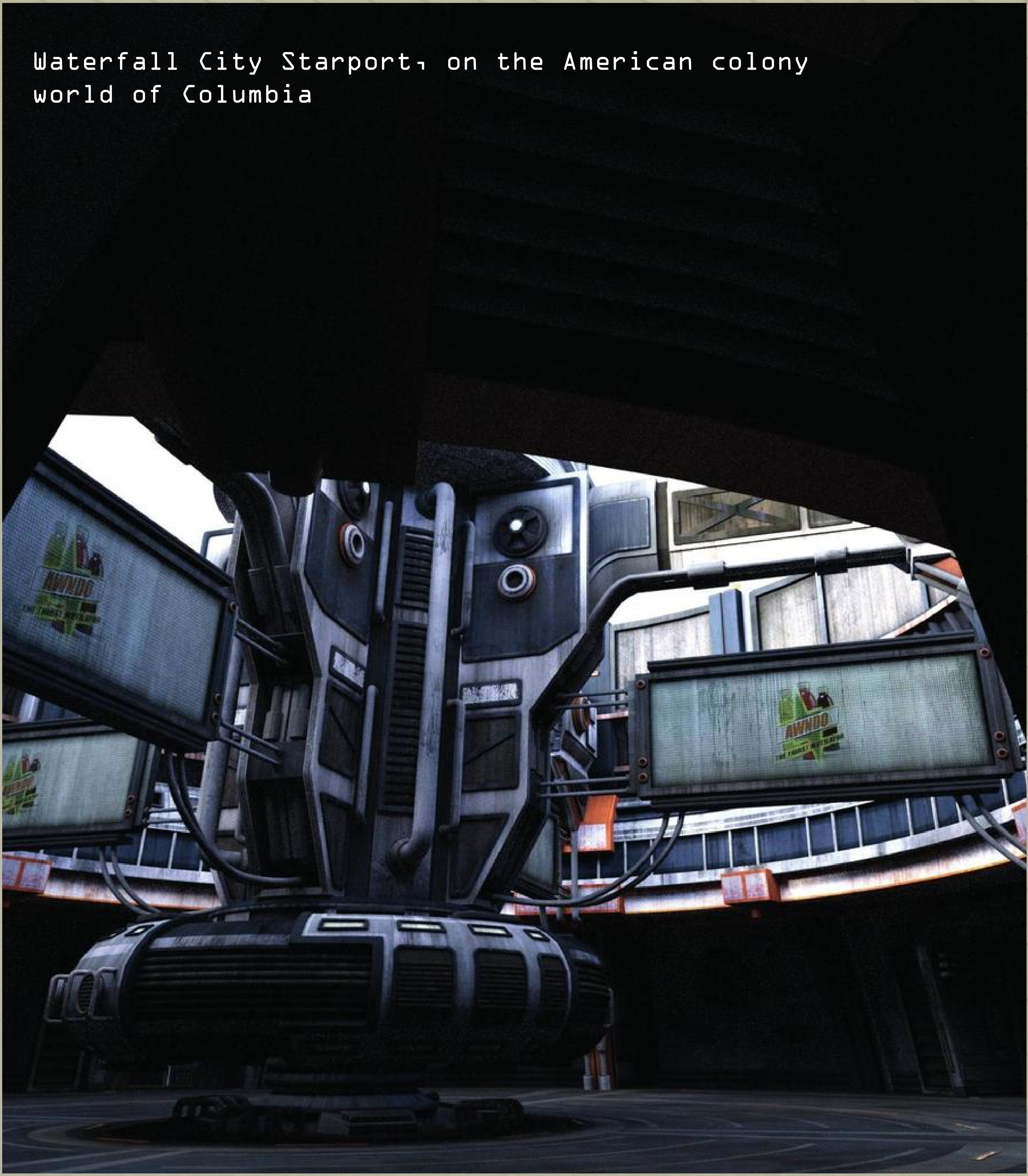
MED-BAY
CRYOGENIC VAULT
ENGINEERING
REACTION MOTOR
FUSION REACTOR
HYPERDRIVE
ICO

Extract from *'Safety, Semiotics and Signage ICO-8044-10-2215-Q'*



Waterfall City Starport, on the American colony world of Columbia

CREW EXPENDABLE – THE HORROR

We live on a placid island of ignorance in the midst of black seas of infinity, and it was not meant that we should voyage far.H.P. Lovecraft

Creating Fear

HOSTILE lends itself to horror perfectly. A cynical world, filled with everyday people going about their jobs is the standard starting point for most good horror stories; the protagonists live in the normal world, which is rational and comprehensible – even mundane. There are no super heroes and no actual heroes either, just victims and survivors. It is the familiarity of the **HOSTILE** setting that makes horror (when it occurs) so shocking and different. While a horror scenario can be fun to play, and both exciting and thrilling, when done badly it can turn into a boring and stereotypical bunch of clichés. The trick to making a scenario or situation scary (for the players – we can assume the PCs are suitably terrified!) it is not to replicate what has been done in your favorite movies, but to use similar techniques.

The three key parts to a horror situation are uncertainty, isolation and timing.

Uncertainty – Before vampires became cool and romantic, they had been wandering the wilderness as far as good horror movies were concerned. The reason? Everyone in the audience knew how to kill them, what they could do, how they would behave and where they came from. Stick Kurt Barlow, the terrifying master vampire from Salem's Lot, on a starship in the depths of space and you have a predictable paint-by-numbers kill-a-monster romp, not a horror. Does the ship's locker even have any garlic? Alien horrors and inter-dimensional craziness must be mysterious and unpredictable. Where did it come from? What does it want? What are its capabilities? How about its weaknesses? Will fire kill it? How about the vacuum of space? Discovering the answers to these questions will provide the meat of your scenario, all the while being hunted, eaten and digested (or impregnated). In short – the rules of normality, or reality, have been broken – and walking on that unsteady ground is a scary thing.

Isolation – A classic technique that goes way back - even Janet Leigh found herself stuck, alone, in a motel in the middle of nowhere with killer Norman Bates in the seminal horror, Psycho. Isolation is what **HOSTILE** is all about and much of the work here is already done for you by the setting itself. Miners, explorers, Marines far from base, all are out in deep space, away from support, out of touch, unable to realistically call for help. Even worse, many planets are themselves so hostile that the characters will be isolated within the confines of the building or complex that they find themselves in, running outside and hiding in the mountains is no good if the atmosphere is filled with ammonia and will burn your lungs out in a matter of seconds. On an even smaller scale, the characters might find themselves trapped inside their vacc suits, isolated even from one another… so that when that alien nasty finds a way in, no-one can help you, not even your buddy stood next to you with a fully-automatic shotgun. Now *that's* isolation!

Physical isolation, that is, the inability to call for help and to have the authorities deal with the problem for you – is only part of this technique. Another, used so brilliantly by James Cameron in the movie Aliens, is to isolate the protagonists from any useful technology. Weaponry, hiding places, escape routes and tools can all be systematically stripped away to increase the tension and the feeling of growing powerlessness. This is tricky to do in a roleplaying game without the referee seeming to be simply foiling the players' plans. If it can be done, then perhaps the best way of isolating player characters from escape routes and technologies is to have them do so themselves, by trying to defeat the monster, they inadvertently make life more difficult for themselves.

Timing – Knowing when to throw a horror or scare at the players is the hardest technique of all to master, if it can be mastered at all. Many movie directors struggle and fail to supply the tension or the shocks that you would expect – how much more difficult, then, is it to achieve in an unscripted, improvised session of a roleplaying game? But, if you achieve just one (or two) genuine moments of tension or fear amongst your players then you will have succeeded, because it is that one moment which will be remembered by your players. Timing in a horror story isn't like the timing in a comedy; it can cover a couple of techniques.

The first is a deadline - the air is running out, the ship is heading for a star, the virus will take effect in two hours, the eclipse will begin in one day, the reactor will go thermonuclear in six hours, etc. Often this is related to the horror, and solving one prevents the other. But these deadlines can also be thrown in as external factors, simply to ramp up the tension. It is a highly recommended technique, and very easy to implement.

The second is pacing. When does the creature show itself? The answer (of course) is not when the players expect it - and that can be tricky to arrange since they are probably focused on dealing with the menace 100% of the time. The trick here is to give them multiple things to worry about and multiple things to do, just to stay alive. While a party of PCs goes hunting the creature, another team goes to try and repair the airlock that got fried when they all tried to blow the monster out of it earlier on. The work will be hard, and as the referee forces them to make yet another Mechanical roll – that's when the monster strikes. Yes, they will have guns with them, they will be worried about the creature showing up, but all you need is for the players to take their eye off the ball for a second and then, wham, the thing strikes. It is a common movie technique, made much easier for the director by being able to script it all beautifully.

In a similar vein, the biggest shocks always come when the players feel safe, relaxed and not under threat. They are resting, or they think they've driven it away, or even killed it outright. This is another great time to hit the players with the horror. Finally, try changing the pace. If you are running a campaign or a short arc of linked scenarios, then make sure there are more mundane scenarios to play through, too. If every game is a horror, then the players will soon be expecting it, and straight away that flouts the first technique – *uncertainty*. Again, good horror is embedded in reality and normality, so playing rig rescue games or planetary survival situations will provide that established reality – a reality that you can then cheerfully break apart as a hyperspace rift spills out some mind-mangling horror in the next adventure. One of the most memorable SF horror movies of recent years for me was a little, low budget movie called The Last Days on Mars. Having just watched the slow-paced, low-key, realistic space drama Europa Report the day before, I was expecting nothing more than a slow-paced, quite realistic space drama set on Mars. I was shocked, surprised and delighted, then, when it suddenly turned horrific! I had no inkling at all – and the impact of the horror was greatly magnified for me!

Exomorphs – Alien Horrors

`I have seen beyond the bounds of infinity and drawn down daemons from the stars… I have harnessed the shadows that stride from world to world to sow death and madness...H.P. Lovecraft`

Everything is hostile - from a red dwarf's x-ray flares to a planet's ammonia-tainted atmosphere, from the effects of hyperspace to a space suit depressurization. And the deadly and threatening nature of the universe extends also to alien life. A lot of alien fauna is benign, of course, life forms surviving as best they can in their own ecosystem, but often these critters rub Man up the wrong way. Some attack human vehicles thinking they are mates, some creatures are parasitic much like Earth-like leeches, some others attack human colonists on sight should they wander into the creature's territory. That is all well and good – ecology in action and all of that. But the universe can serve up some truly awful horrors - alien creatures that can only be described as killing machines, perfect organisms that are tough, resilient to punishment and absolutely and forensically dedicated to the eradication of human life. And yes, these things exist out there amongst the cold stars, and most of them have not been discovered yet. Pray you are not one of the humans who discovers (or should that be 'triggers') one of these super-predators.

The referee should introduce these alien horrors or 'exomorphs' to the player characters with care. Play up their horrific nature, have them attack stealthily and when the characters are most vulnerable and always out-gun or out-number the poor characters. Move the encounter from the realm of action-adventure to horror.

Writers and directors have used various plotting techniques to transform what is, essentially, 'an animal' into a horrific monster with a great psychological impact. Here are a few techniques:

- The alien is virtually unkillable. Guns don't work, fire doesn't work.
- The ship or complex is damaged, without power or surveillance cameras or lights (or all three!)
- A rare natural phenomenon ends the hibernation of hundreds of these creatures. The writers of Pitch Black and Riddick used a rare and long-lasting solar eclipse and a rainstorm, in those respective movies.
- The creature lives within or replaces human beings. In this way it is invisible and can masquerade as a friend – when it is actually a fiend.
- The alien doesn't kill you - no it does far more horrific things to you. Egg-Laying is a common theme and one taken from Earth's own insect world.
- You are the monster. The alien is actually an infection that transforms humans into something truly alien, and truly horrifying. Naturally these changelings then turn on their fellow humans. But who will be next?
- It is dark. Most ships in the **HOSTILE** setting are woefully equipped with internal lighting, since the saving of money and energy is more of a priority for the corporations than crew comfort. This is a setting conceit, but one that adds to the atmosphere and gives those alien horrors somewhere to hide!
- Invisible – or nearly so. Perhaps the creature has amazing chameleon-like abilities that allow it to attack as if from nowhere. Perhaps, like the 'Id Monster' in Forbidden Planet, it really *is* invisible (in both infra-red 'heat vision' and in normal light) and techniques must quickly be developed to determine when it is about to move in for the kill.
- It comes back to life when killed.
- It can regrow limbs and body parts at a prodigious speed.

- It can read minds, or perhaps read emotions. It may even have some telepathic or seeming mind-control powers.

- Its bite or sting has horrible consequences for the victim including, perhaps, paralysis, zombification, degenerative disease, insanity or transformation into one of the aliens.

- It can move at unearthly speeds when needed, treat the alien as having two full actions for every combat round, compared to the player characters' one action per round.

- The alien is actually a power source that can infect machines and turn ships, colonies and pieces of equipment against the player characters.

- It lives to kill. This is almost a *de facto* rule for any alien horror. In its natural environment there may be checks and balances, perhaps another predator or difficult-to-kill prey, or some kind of environmental hindrance. Out of that habitat, free of those ecological restrictions, the thing appears to be a born killer.

- The creature is usually docile, however, some element – perhaps a gas or type of energy – has unforeseen consequences that triggers a dramatic change in the alien into a cold-blooded killing machine.

- Shape-shifting. The alien can dramatically alter its size and shape to squeeze through air vents, down pipes or under doors.

- You don't dare kill it. Perhaps it has molecular acid for blood which will eat through the ship's hull, perhaps it explodes when it dies (to release spores?), perhaps it just gets bigger and tougher the more damage is inflicted upon it.

- It consumes energy. The alien seems to get tougher and harder to kill as time goes on – it may be consuming radiation, fire, laser light etc. and only by removing that feature from the environment can the creature be killed.

When the referee creates an exomorph, attention must be paid to believability first and foremost, but also to lethality and surprise. Mix and match several of the tropes in the list above, and decide what kind of environment would best suit it. Where would you really *not* want to meet up with this thing? That's where your game should be set.

There are other techniques, too, that could be employed in the crafting of the scenario. Consider a single creature rather than a horde - a lone alien fiend adds more menace to the situation. As the numbers increase, and I'm thinking of the movies Pitch Black and Starship Troopers, here, the horror starts to be replaced by combat action. The trick is to find the balance. Rather than have a ravening army of these aliens, a more subtle and effective plotting technique is to have fewer, that come in discrete waves, or that behave intelligently. The velociraptors that feature in both Jurassic Park and Jurassic Park 3 would make fine alien terrors! Another well worn plot is 'you think the creature is dead/gone/left safely behind' but it is still alive or has been carried with you to imagined safety. I'm not sure any referee can successfully pull of that plot trope, since it has been done so many times in the past (Alien, Aliens, Alien Resurrection *and* Alien Covenant, for example) and so will almost be expected by the players. Still, it might be worth considering …

Building Your Exomorph – Creating some nasty alien horror to be the focus of a scenario will take a little thought. The primary focus is: How does it stalk and kill? Gone are the days of a 'man in an rubbery alien suit' (no disrespect to Bolaji Badejo!) and so your alien must have some unique signature, a memorable method of attacking that makes it stand-out. There are a few different ways of approaching this.

The first is to consider the environment you want the horror to be comfortable in, and to attack from. An ice moon, perhaps, or thick jungle, or the dune fields of a desert world.

The second is to look at books and movies, and lift out a creature from there to transplant into the environment (or starship) of your choice. Another way is to look closer to home, to the Monster Manuals and Creature Compendiums of certain fantasy games, where bizarre and deadly critters abound, often with remarkable talents and abilities. Many are unsuitable, but look carefully and you can spot the odd decent alien horror in there.

A number of exomorphs are described below, they are all inspired by movies from the past few decades and may be familiar to you. Use them in a scenario, or as examples for creating your own interstellar monsters.

Reticulan Parasite

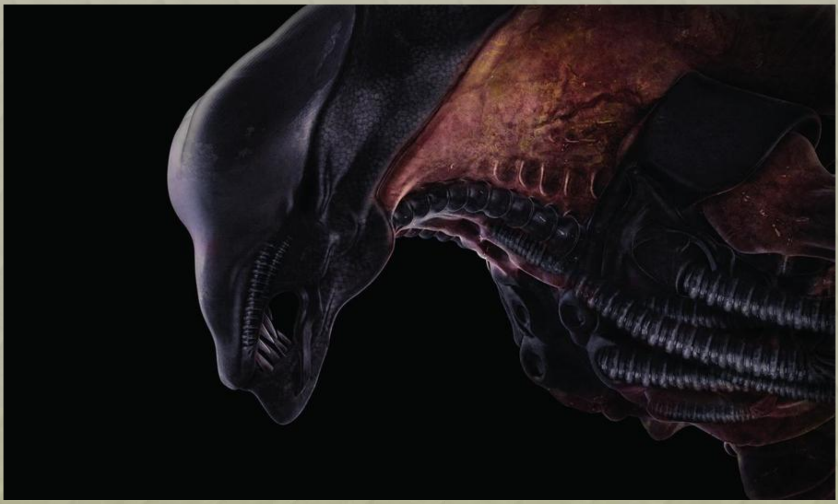
This creature has a complex lifecycle. Beginning from a spider-like impregnator, and bursting from the chest of a host as a fanged, carnivorous larva, the reticulan parasite rapidly grows into a 2m tall bipedal killer within the hour. The adult dragon is a stealthy, vicious and incredibly tough predator. All forms have acid as blood, a splash or spurt of this will cause 1D6 damage per round for up to 3 rounds, depending on the size of the splash.

Reticulan Impregnator [Stage 1]					
2 Kg	Str 3 (-1)	Dex 6 (0)	End 2 (-2)	Int 0 (-2)	
Number Appearing: 1		Speed: x1 (6m/rd)		Armour: 3	
Weapons: claw+2 (special: successful attack indicates host is knocked unconscious and the creature has fastened onto host's face)					
Attack: Automatic			Flee: 4-		
Appearance: Pale coloured spider, with a long, powerful tail. One meter total length.					
Behaviour: From a large leathery egg (ovomorph), typically laying dormant until a host approaches, a spider-shaped impregnator emerges. It has surprise and moves quickly to cover the face of a host, wrapping a tail around the neck and sending an ovipositor down the host's esophagus to implant an egg. It then feeds oxygen to the host, keeping it alive while the embryo develops. After several hours, it drops off and crawls away to die. The larva within the host is ready to emerge minutes or hours later.					

Reticulan Larva [Stage 2]					
6 Kg	Str 6 (0)	Dex 11 (+1)	End 6 (0)	Int 1 (-2)	
No. Appearing: 1		Speed: x3 (18m/rd)		Armour: 3	
Weapons: teeth (2D6)					
Attack: If it has Surprise			Flee: Flees if Surprised		
Appearance: Larvae are around 40-50cm long, with two arms, two legs and a tail. They are pale brown or red in colour and have a long, eye-less head.					
Behaviour: The host will awaken but within minutes the larva, a carnivorous two-legged creature will eat its way out of the host's chest after feeding on the its aorta for a time. The host cannot survive this process. The creature typically tries to scavenge food in order to begin its accelerated development.					

Reticulan Dragon [Stage 3]					
120 Kg	Str 18 (+4)	Dex 17 (+3)	End 9 (0)	Int 1 (-2)	
No. Appearing: varies	Speed: x3 (18m/rd)	Armour: 9			
Weapons: teeth (2D6+2); Stinger+1 (2D6 or V/Difficult End roll to avoid Paralysis)					
Attack: 6+	Flee: 3-				
Appearance: Dragons are 2m tall bipeds, with a long, muscular tail and large, curved, oblong head. There are several dorsal tubes used for sensing, or for balance. Their skin is black, and their musculature detailed and intricate - resembling an exo-skeleton.					
Behaviour: Within only a hour or two, the larva has developed into the drone or dragon, a powerful and incredibly fast-moving predator. It can kill to eat, using its inner mouth-parts to punch into the head or body of its victim, but will more often paralyze victims using a poisoned stinger at the end of its tail. Victims are then cocooned in a secreted resin where they will soon become hosts for more of the spider-like impregnators. Dragons hunt using sound and infra-red, and can move silently, climb any surface and hide easily within only the slightest shadows. They are fluorine-based, with acid for blood. If there are no Queens, then chemical changes in the creature's stinger will mean that the first victim a dragon cocoons will actually begin to morph into an egg.					

Reticulan Queen [Alternate Stage 3]					
800 Kg	Str 22 (+5)	Dex 17 (+3)	End 22 (+5)	Int 1 (-2)	
Number Appearing: 1	Speed: x3 (18m/rd)	Armour: 9			
Weapons: teeth (3D6+1); Stinger+1 (3D6)					
Attack: If nest under threat	Flee: No				
Appearance: Queens are similar in general appearance to the dragons, but they are much bigger, approximately 6-7m tall when standing erect and 15m long including tail. Their body structure differs also, since they possess two pairs of arms, with a smaller secondary pair of limbs located on the chest. The queen's head is much larger than those of a dragon and is protected by a neck frill, similar to those seen on fossil triceratops skulls. Egg-laying queens possess an immense egg sac which attaches to their lower torso.					
Behaviour: There are two types of Reticulan adult, the mature dragon and the queen. Queens are born quite quickly once a viable source of hosts is found by a lone dragon. The queen is able to lay hundreds of eggs, potentially giving birth to hundreds of dragons if enough hosts are available. The queen is huge and powerful, but immobile at the centre of her nest, attached to a large egg-sac supported by secreted resin tendrils. The queen can detach from this massive egg-sac in an emergency. She has some mild telepathic communication with dragons within 30m of her.					



Auroran Worm

3,200 Kg	Str 24 (+4)	Dex 2 (-2)	End 22 (+5)	Int 0 (-2)	
No. Appearing: 1-3		Speed: x2 (12m/rd)		Armour: 10	
Weapons: teeth (3D6) and tentacle/claws+1 (2D6)					
Attack: 6+			Flee: 5-		
Appearance: The Auroran worm is a slug-like burrower that is 6m long, pink and pale-brown. Rings of hooks along the body propel the worm through the soil. The head is protected by a huge parrot like beak, within which are three 2m long tentacles with which it can reach out to attack.					
Behaviour: The worm burrows through the regolith (soil) on Aurora (UV Ceti) where it uses seismic detection to locate prey both under and above ground. It attacks by burrowing beneath a person or vehicle and undermining the soil so that it gives way, the victim falling into the collapsing hole as the worm reaches out with its tentacles (noted above as claws+1) to drag the victim into its beak. Each of the three tentacles can attack independently and if successful will grab on. These tentacles might immobilize an arm or a leg, and the victim gets one round to break away: he or she must make an Average Str roll for each tentacle. Fail and the worm pulls the victim under. Worms can undermine buildings or roads, drag down stationary vehicles, break pipelines and even smash through into tunnels. They can act co-operatively.					

Evolving Nightcrawler

150 Kg	Str 14 (+2)	Dex 7 (0)	End 7 (0)	Int 3 (-1)	
No. Appearing: 2D6		Fly Speed: x2 (12m/rd)		Armour: 2	
Weapons: teeth and claws (2D6)					
Attack: 5+			Flee: 5-		
Appearance: Resembling the fictional gargoyle, the nightcrawler is a horrifying-looking humanoid creature 2m in height, with long tail and leathery wings. It has a long sight-less head, with crests and horns emerging from the back of the skull. It has many teeth and long claws. The nightcrawler's skin is pale brown or white.					
Behaviour: Actually a virus, the nightcrawler lives in certain caves on a certain remote world. Once this parasitic organism enters the host's bloodstream, it reproduces quickly — and stimulates radical anatomical changes in the host, progressively developing monstrous, semi-evolutionary adaptations to the surrounding environment. In humans the nightcrawler organism creates the creature described here. Organs within the head crest allow for echolocation and spines on the back for changes in air pressure. Like a bat, these creatures have wings for hunting trips outside the cave system at night. The creatures do not endure the light well and will flee from it. A bright light (equal to strong sunlight) will cause 1 point of damage per round. The nightcrawlers live in cave colonies, coming out to feed on native wildlife. At certain times (depending on the planet being used as the setting) they may hibernate for long periods, saving their strength for the time when prey is more plentiful. Being wounded by a nightcrawler carries the risk of infection … and eventual transformation into a nightcrawler within 12 hours. Make an Average End roll to avoid infection after being wounded by a bite. Scientists may identify the virus within the cave's water system and perhaps also in other cave animals, before they meet the human-evolved nightcrawlers that dwell there. Question: who were the first humans to be infected? When did they arrive?					

Feathered Serpent

75 Kg	Str 11 (+1)	Dex 15 (+3)	End 9 (+1)	Int 1 (-2)	
No. Appearing: 1D6+2		Speed: x3 (18m/rd)		Armour: 1	
Weapons: claws+1 and teeth (2D6); poison Spit (Average End roll to avoid 1-6 hours of blindness)					
Attack: 6+			Flee: 6-		
Appearance: A 1.2m tall, 2m long bipedal creature with a long neck and a long, powerful tail used as a balance when sprinting. The serpent's head is small, with a mouth full of razor-sharp teeth, and its eyes are lizard-like. A wickedly curved claw on each ankle is held ready for bringing down fleeing prey. Feathers run down its back and tail, and a leathery frill at the back of the head is folded back against the neck. The serpent is striped, black and brown.					
Behaviour: Feathered serpents are jungle-dwelling pack hunters, clever, tenacious and very, very vicious. With almost telepathic power, they communicate in silence, co-ordinating their attacks, setting ambushes and even diversions. Moving stealthily, the serpents will spring from cover in a co-ordinated attack, spring up with their powerful back legs and using the huge curved claws on their ankles to rip and rend, before biting. These creatures are masters of stealth and camouflage. When cornered, frightened or alarmed, the serpent can open its neck frill in a display of bravado and spit cobra-like poison to a range of 4m.					

Metamorph

100 Kg	Str 11 (+1)	Dex 15 (+3)	End 15 (+5)	Int 12 (+2)	Edu 15 (+2)
No. Appearing: 1		Speed: x1 (6 m/rd)		Armour: 0	
Weapons: Teeth+1 (2D6+1) Tendrils +2 (2x attacks)					
Attack: varies			Flee: varies		
Appearance: The metamorph will appear as a human being, a specific human – it will take the host's shape by absorbing its DNA and then altering its physical structure to resemble its victim. A DNA test will give the game away, as will a basic blood test. The metamorph can always return to its natural state, and that is reflected in the values listed above. This state is a 2m tall humanoid, covered partly in fur and partly in raw, bloody tissue. Membranes and muscle ripple and there are bones visible at strange angles. The creature's head is twice as large as a human's with four eyes and no visible nose or mouth – that is until the head splits open down the center to reveal a vast tooth-filled maw running from the top of the head to the 'chin'. The metamorph can attack with this horrifying mouth.					
Behaviour: The metamorph is an intelligent alien creature of malign intent. It must take its natural form in order to absorb a new victim and it does this with whip-like tendrils that shoot out from its long, claw-like fingers, each finger turning into a 1m-long tendril. The two groups of tendrils each get a separate melee attack at +2. Success indicates the tendrils pierce the skin for 1 point of damage. The victim can make a Very Difficult End roll to resist the process, and if successful pulls away from the metamorph. If unsuccessful his DNA is absorbed through the tendrils, and the beast then eats him, leaving nothing behind but the uniform that it can then wear. The tendrils cannot go through any armoured suits or vac suits, but can easily avoid an armoured shirt or helmet.					

Hyperspace Anomalies

Alien horrors represent the real, the tangible and the dangerous. Not monsters as such, but evolved life-forms, exomorphs that are highly adapted to their hostile environments. But there are other dangers out there, far less tangible and far more incomprehensible than any exomorph.

You could call it the 23rd century equivalent of marine pollution: multi-kiloton starships punching their way into and out of hyperspace hundreds of times every day. Perhaps this has unforeseen effects. Hyperspace is still a poorly understood phenomenon and with each horrific hyperspace incident, physicists learn just a little bit more. In game terms, hyperspace anomalies can form the focus of a 'haunted house' situation, with strange occurrences threatening both the crew's lives and their sanity. These anomalies might also let in some trans-dimensional and Lovecraftian 'Thing That Man Was Not Meant to Know'. Such hyperspace beasties do not have to conform to the laws of physics, biology or evolution as the alien exomorphs in the last section did. A number of hyperspace anomalies for use in the game, or as suggestions or your own scenarios, are suggested below.

Timehole – A wormhole to the crew's past or the crew's future opens up and takes the starship along for the ride. What happens when they meet their past or future selves? What significant event have they been taken to?

Possessed – The ship itself is now tainted with a malign hyperspace influence. Crewmen begin to change in behaviour and demeanour. The referee might start imposing periods of 'black out' on players as they lose control and cannot remember what they have done. They have done bad things. Soon they will lose control completely and begin torturing and eating one another.

Twins – One of the crew, ideally an NPC, comes out of hyperspace with a doppelgänger on board. The crewman is held in some sort of suspended animation in a secret location on-board ship, whilst the evil doppelgänger plots to sabotage the vessel and its star-drives in order to return the ship to hyperspace – the drives burning out once they have arrived. Perhaps the doppelgänger can only be physically harmed by injuring or killing the innocent crewman, when he or she is found.

Hello, Mother? – A machine-intelligence from hyperspace takes control of the ship and its computer. Using repair robots, mining drones and probes, it attempts to eradicate the human infestation. Can the player characters drive the alien intelligence from the mainframe without damaging the computer system and leaving them stranded in space?

The Doorway – A wormhole has opened up on the cargo deck (or perhaps some other, less travelled, part of the starship). It connects the vessel's corridors to the surface of a hell-world. Not only is the corrosive atmosphere of this world seeping into the ship, but so are tough, silicon-based life-forms. These trilobite-like, acid-loving critters can chew right through the walls and decks of the ship. Do the critters retire back to their world at night, to sleep? Do the players want to go through the wormhole to investigate? Hell-world might be hundreds or thousands of light years away, it may not even be in the Milky Way, heck, it might be inside a different universe! What might such information and survey data be worth to the Company?

Pocket Universe – The hypersleep pods open up as normal, but the pods themselves don't seem to be inside the ship anymore – they could be in a meadow, in a cave, a desert, perhaps inside a building … The interior of the starship has been altered and expanded to encompass a new pocket reality. What this reality contains is up to the referee. Is it a twisted version of the Wild West? Is it a magical but deadly forest? A subterranean labyrinth? The universe inside the ship is only a few square kilometres in size, but could be facing imminent destruction unless the crew fix the problem – an analogy for them actually fixing the ship itself and returning them to 'normal' space.

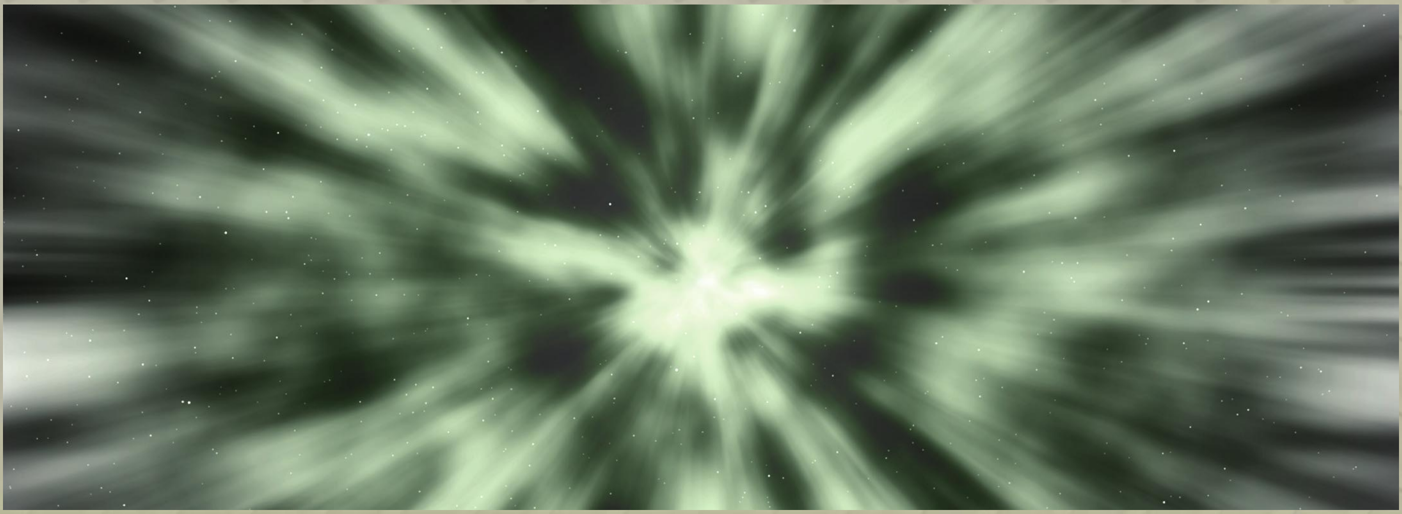
Star Vampires – Star vampires, energy creatures that live in hyperspace and feed purely on 'life force' wink in and out of existence on the ship during a series of horrific attacks.

Blanked – A crewman no longer exists, although the player character crew can remember him. The starship has no record, his locker is empty and the company have never heard of him. But, the missing crewman seems to be 'somewhere', because there are strange messages coming in that seem to be from him, no less. The messages are cryptic, and could be via Morse code, writing in bathroom mirrors, fridge magnets or something equally esoteric (and perhaps a bit more scientific). Can they bring him back?

Mirror Universe – The starship and its crew are 'changed', they are the same people with their normal identities and memories but on a different ship with different uniforms and a different mission. It soon becomes clear that this is a 'mirror universe' and that the crew have to come to terms with this quickly and solve the problem at hand (and there *will* be an imminent and critical problem at hand!). Any scientist on board might theorize that resolving this situation may bring them back into their own universe since it is the situation itself, like a bump in a rug, which has brought them out of hyperspace at this particular spot.

Counter-Clockwork– The ship drops out of hyperspace and the crew awaken, but unusually, no-one is hungry or thirsty. Someone might notice the ship's chronometer is moving backwards, as are their wristwatches (if they check). Time is going backwards and this explains why many of the ships systems, particularly the drives and powerplant are unresponsive. In an hour someone will feel ill and throw up undigested food, eaten from before the jump to hyperspace. Someone else will throw up pure drinking water. Their metabolisms are bizarrely working in reverse, they are even breathing carbon dioxide and exhaling oxygen. The effect will soon begin to accelerate; others will vomit up prepared foods. They will soon starve or die of dehydration. But once the players realise the time dilation is accelerating they should be able to calculate that they will be infants soon enough. The referee might impose a rate of change of 2 years per hour. How will the players sort this mess out, before they die of young age or thirst? Will anyone think to rig up an intravenous fluid system?

The British comedy TV series Red Dwarf is a mine of ideas for hyperspace anomalies, even Star Trek: The Next Generation borrowed a few!



EARNING HAZARD PAY

8

It's a terrifyingly hostile universe out there and mankind has not evolved to survive the rigors of space. Without air the traveller will asphyxiate, in a vacuum he will suffer heart failure or brain damage, in the cold he will freeze solid, in the heat he will be vaporized. The traveller can be poisoned by toxic gases and irradiated by cosmic rays or solar flares. On starships, habitats and space stations, guns are anathema and fatal blow-outs resulting in explosive decompression are an ever-present danger. How long did you say you signed up for? Three years? Good luck …

AIRLOCK
WARNING
FAILURE TO EQUALISE PRESSURE BEFORE UNLATCHING CAN RESULT IN CREW INJURY AND EQUIPMENT DAMAGE

THE ZERO - G WORKPLACE

It's actually called microgravity because whereever you are away from a gravity well, you can't really escape the gravitational pull of something, whether it's a moon, planet or star. But we call it zero-G because, near as dammit, there's no up or down and physical action or motion is problematic. The weightlessness is an illusion and is due to the fact things in space are in 'free-fall' around Earth, a star or some other body.

Spacecraft and large space stations in **HOSTILE** use grav plates to create artificial gravity, allowing crew to walk around as if they were on an airliner. Outside of those comforting environments, and away from the surface of a moon or planet, zero-G is king.

Most personnel who work out in space will have Vacc Suit-0 as standard. This includes knowledge of putting on a spacesuit, its operation and basic maintenance as well as some familiarization with zero-G activities. Higher levels of the skill are indicative of much greater experience of working in zero gravity. A crucial task, whether it is aligning an antenna on an 'extra vehicular activity' (EVA), shooting someone with a shotgun or trying to shut an airlock door quickly to prevent an intruder forcing their way in, requires a skill check. For regular activities, skip the rolls entirely.

Avoid Losing Control in Zero-Gravity: Vacc Suit, Dexterity, Instant, Average (+0)

Apply the following DMs: Using a tool to repair/ construct -2, Firing a gun -3, striking with tool, weapon, fist etc., or pushing/pulling -4, using a handhold +2

Losing control means that the task has failed until control is re-established, the character is tumbling! Roll again to regain control, but this time there are no DM's, either positive or negative, except for those derived from Vacc Suit skill and the Dexterity characteristic.

Zero-G Tools

Working in zero-G requires highly specialised tools.

Locked Umbilical: Although many spacers carry out EVA's using thruster packs, disconnected from the spacecraft, it is often safer to use a length of umbilical. Gone are the days of a loose air pipe trailing in space. Each umbilical is flexible pipe actually made up of 10m of ball and socket links encased in an outer soft covering. A ratchet on the spacer's belt enables him to apply immediate tension to the links, locking him in place at his worksite. Up to 10 umbilicals can be connected together to create a single tether, 100m long. $500. 5kg.

Grab-Pad: The grab pad is analogous to a climber's piton which protects him from a fall by anchoring him to the rock face. A short metre-long tether connects the spacer's belt to the grab pad, and this electro-adhesive pad adheres strongly to any metal surface, once activated, by means of passing a small current through two metal electrodes. It resembles a simple plate with rugged hand-grip. Electro-adhesive boots (known as 'mag boots') can be fitted to hard suits. Cost $100, 500g.

Hand-held Thruster: For short duration EVAs the handheld thruster is an invaluable and powerful tool, capable of providing the spacer with a delta-V of 2 metres per second. It uses high pressure cold gas (typically nitrogen) as thrust, and being hand-held it is extremely versatile. The thruster costs $300 and has a mass of 2kg. It is good for 15 minutes of flight.

Thruster Pack: Longer EVAs, or transfers between spacecraft, require the use of a thruster pack. Most starships have one in their locker. The pack is a 30kg fuel and motor unit worn on the back, with control arms swinging around for use at the front of a user. A joystick on the right arm and keypad on the left provide complete control. Once a desired orientation is achieved, the user can engage an automatic attitude-hold function that maintains the inertial position of the pack in flight. This frees both hands for work. The pack holds enough nitrogen gas fuel for approximately 6 hours of EVA, though this does not constitute continuous thrust. Delta-V is an impressive 25 metres per second. Cost is $2000, 30kg.

Grappling Arm: Costing $1M, and massing 2 tons, the grappling arm is a remote manipulator designed to hold or retrieve cargo, salvage or other objects in space. It also has a foot harness at the 'hand' to enable a space-walker to stand on the end of the arm and be transported out to a work-site. The grappling arm can extend out to a maximum of 50m.

Zero-G Tool Kit: The zero-G tool kit is essential for any repairs or construction work under-taken in zero gravity. It must be carried to the worksite, though hard suits can have such kits fitted as an optional extra. Tools in this kit are tailored for zero-G work, drills have counter-rotating heads to prevent torque spinning the user around as a reaction. There are powered screwdrivers, wrenches, angle-grinders and saws, all battery-powered and benefitting from torque compensation. The basic portable kit costs $250 and masses 2kg. The full kit, based on-board the starship, costs $1000 and weighs 12kg.

Pressure Loss (the 'Blow-Out')

On many small moons, on asteroids and in deep space, humans are battling against lack of pressure, in most cases a vacuum or a near vacuum. This is always the greatest danger to any space traveller.

Puncturing the Hull: An attack from outside the hull may puncture it if the roll to hit is successful. Inside the hull, stray bullets or other missiles may strike furniture or equipment instead of the hull. If a gun is discharged and does not hit a human target, roll its damage dice to determine its trajectory. On 2-9 the bullet lodges in something else, on 10+ the bullet strikes the hull, or just ploughs through the piece of furniture to hit the hull anyway! Lasers will destroy whatever they hit, so the chance of a hull strike for a laser is a flat 50% (roll 2-6 on a 2d6 for a hull strike).

Hull of a ...	Protection
Ground vehicle, aircraft or small craft	4
Starship or space station (standard hull)	12*
Surface base or building	25

*Each point of Spacecraft Armour adds +4

If a weapon hits a hull, roll for weapon damage as normal and subtract from this the armour rating of the target. If penetration occurs, a 1 cm diameter hole is punched into the hull and decompression begins.

Explosives of any kind automatically strike the hull if detonated internally. The fact that the atmospheric pressure of the cabin is exerting great force on the skin of the habitat or vehicle adds a considerable punch to any internal explosion, increasing the chance of a puncture. Roll explosive damage as listed in the Rules, and subtract the relevant armour modifier. Every point of explosive damage beyond that needed to puncture the hull widens the hole by 10cm. A frag grenade tossed into an orbital lab goes off and does 24 points of damage, lowered to 12 after the lab's hull is considered: that constitutes a breach. The 12 points cause a hull rupture 1.2m in diameter...

This combat rule can serve as a guideline for other projectiles, from micrometeoroids striking the hull, to vehicles crashing into a surface habitat, fuel pumps exploding or a grappling arm malfunction.

The Speed of Decompression: Designers do not build huge open-spaced colony buildings or spacecraft, they are divided up into smaller compartments separated by pressure bulkheads. Decompression of one section will not affect the rest of the vehicle or habitat. Puncturing the skin of a spacecraft or habitat is easy and great efforts must be made to avoid situations where such a catastrophe might occur. But what happens when such a situation arises?

For a 1 ton cabin, a 1 cm diameter hole will cause pressure to drop by 50% in 5 minutes and to vacuum in 10 minutes. The half-way point marks the level at which asphyxiation begins (see below) and the character suffers 1d6 damage per minute. This basic value can be extrapolated to determine pressure loss for other sized-compartments. Should a bullet punch a hole through the skin of a 20 ton cargo hold, for example, pressure loss will take 20x longer (1 hr 40 mins to reach half an atmosphere, 3 hrs 20 minutes to be reduced to vacuum). The real danger is in hatches popping open and in ruptures caused by explosions. Using the previous example of a 10 ton lab module damaged by a grenade, the breach created was 1.2m in diameter. Increasing the affected volume increases the time to asphyxia to 50 minutes, but the breach was also 120x larger:

Time to Asphyxia: (5 mins x 10) / 120 = 0.42 mins (25 seconds or 4 combat rounds)

If a 1 ton airlock blew its hatch and exposed unprotected individuals to vacuum, the effects of asphyxia would occur much faster! Assume the hatchway is a 1.2m breach:

Time to Asphyxia: (5 mins x 1) / 120 = 0.042 mins (3 seconds or half a combat round)

Note that since full vacuum is reached after ***twice*** this duration, the folks in the airlock will suffer the perils of vacuum at the end of the six-second combat round. What exactly does this do to the characters?

Effects of Vacuum on the Human Body: There are a lot of movie myths about exposure to a vacuum, so the best place to find the truth is to look at books like the *USAF Flight Surgeon's Guide*, Shayler's *Disasters and Accidents in Manned Spaceflight* and NASA's *Bioastronautics Data Book SP-3006*. Human and animal testing, coupled with accident reports give us the following facts:

- Victims can stay conscious for up to 12 seconds (two rounds).
- Next, convulsions will take hold while water vapour forms in the soft tissue and veins, resulting in the body swelling up.
- Arterial blood pressure plummets as pressure in veins increases, and within a minute of exposure, blood flow has stopped and the heart goes into fibrillation.
- After an initial rush of gas from the lungs during decompression, gas and water vapour will continue to flow outward through the airways. This continual evaporation of water will cool the mouth and nose to near-freezing temperatures; the remainder of the body will also become cooled, but more slowly. Extremities suffer hypothermia; fingers, toes, etc. freeze.
- Nitrogen gas, which is dissolved under normal pressure, comes out of solution and forms gas bubbles within the body. These bubbles cause the 'bends' (decompression sickness), lodging in joints, lungs, the spinal cord and the brain and causing paralysis, pain and possible brain damage and death.
- Victims are clinically dead from 2 to 4 minutes after exposure to vacuum. In tests, some victims exposed for up to 2 minutes can be successfully resuscitated and recover, if quickly restored to pressure.
- Blood does not 'boil' and victims do not freeze solid (at least not immediately).
- Lungs do not burst; opening the airways allows gases to escape easily. However, tests have indicated that holding one's

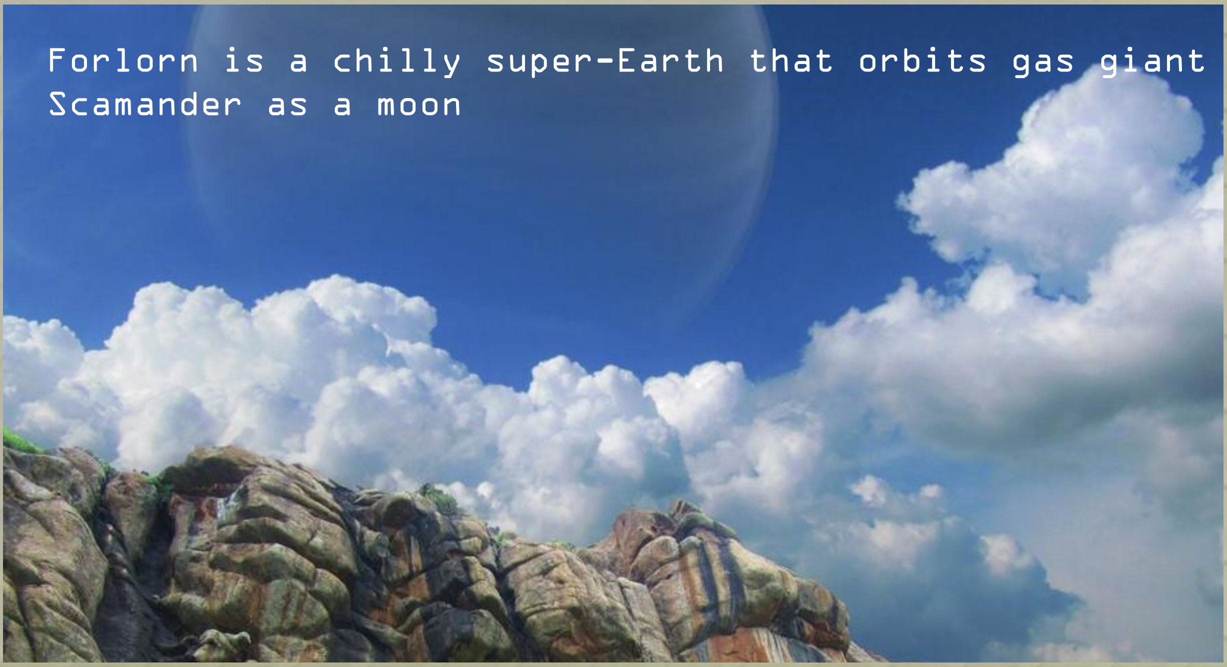
> breath causes the lungs to swell, with tearing and rupture of the lung tissues and capillaries. Trapped air is forced through the lungs into the chest cavity, and air can be injected directly into the blood-stream by way of the ruptured blood vessels. Massive air bubbles move throughout the body and lodge in vital organs such as the heart and brain (a process called ebullism) causing symptoms similar to the 'bends'. This makes recovery unlikely.

In game terms, ***exposure to vacuum results in 3d6 damage per combat round***. To save someone suffering catastrophic haemorrhage and ebullism requires that pressure be restored to at least 50% or more of atmospheric norm. This will prevent further damage. Recovery requires a trauma kit with a defibrillator to restart the heart, an oxygen bottle and specific drugs (namely pentoxifylline, prostaglandins and calcium channel blockers, all of which are found within spacecraft and habitat trauma kits).

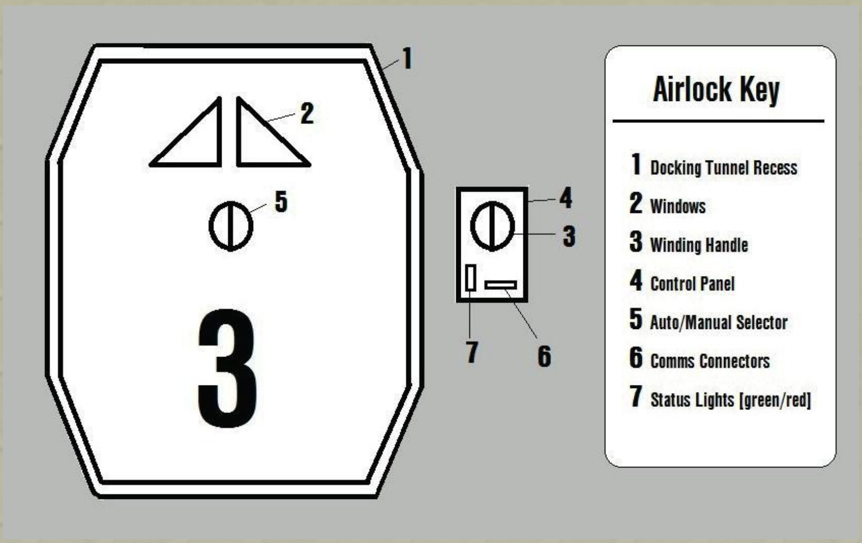
To stabilize a patient exposed to vacuum: Medical, 1-6 mins, Difficult (-2). Failure indicates the patient continues to deteriorate at 1d6 pts per hour. The medic can try again each hour. Success indicates the patient regains 4 points of damage and can begin recovery as normal.

An Alternative to Guns?

Obviously firearms and spacecraft don't mix very well, yet military personnel and police officers need the ability to take down and/or kill a target. Popular amongst space-borne forces are shotguns with their great stopping power but poor penetrative qualities. Glaser bullets which break apart are also popular; they are frangible, with a good degree of stopping power, but they shatter when striking a hard surface such as a bulkhead, window glass or piece of armour. Glaser rounds are the opposite of armour-piercing, they cannot penetrate even Kevlar vests or vacc suits and so in that respects are not much use to a military force. Glaser rounds are great for police officers, bodyguards, counter-terrorist units and military groups assigned to stations or habitats. Otherwise use them as standard firearms ammunition, at the same prices.


Forlorn is a chilly super-Earth that orbits gas giant Scamander as a moon

AIRLOCKS



Basic rules for airlocks are found in the Rules Handbook but the referee may find additional explanation useful when it comes to entering an airlock from outside the space craft. Can it be done? How? Is it difficult? Although there are variations between airlock types, many incorporate the features described here.

Automatic Access

The lock has two settings, automatic and manual, switching between the two is done from the flight deck, from the inner hatch or from the control panel (4) next to the outer hatch.

Automatic is the default. The lock is operated from the flight deck by radio request, or it is overridden by any crewman using the security keypad. Crewmembers wanting to board a vehicle after passing through the docking tunnel need to input their access code on the door's security keypad (8). The door slides up and admits entrance. In space, far from docking tunnels and other vehicles, access may be made in the same manner. A character conducting an EVA in a vacc suit can leave the airlock and upon his return can input his security code with his gloved fingers (one reason swipe cards and retina readers are rarely used). Often he will leave the airlock door open for easy access.

Manual or Forced Access

Manual is an emergency measure, used by rescue workers, or crewmen during some crisis. The auto/manual selector (5) is turned to manual, and then the rescuer turns to the winding handle (3) and physically and laboriously winds up the airlock door. It takes around 10 minutes and alarms sound on the flight deck and at the inner airlock door. A grappling arm or auto-lock mechanism (used by rescue teams) can speed this up to 1 minute.

Rescue workers will look through the windows (2) to establish the lock is empty before opening it and will check the status light (7). Green indicates the lock is unpressurized and safe to open, red indicates the lock is pressurized and that it may be dangerous to open. A flashing light indicates the lock is pressurizing (red)/depressurizing (green).

The comms connectors (6) allow a rescue party to plug in directly to the flight deck to signal the crew about their intentions should there be some kind of communications blackout or failure. Individuals accessing the lock do not have the means to pressurize the airlock until they get inside. If they spot an unconscious crewman within the lock and without a vacc suit, they cannot open the airlock door without killing the crewman. Pressurization controls are located on an inner wall of most airlocks, and the flight deck can operate these controls remotely. An override command can easily be input by a character who knows the access code and inputs on the internal airlock control panel.

Protocol

Most vehicles leave their airlocks unpressurized. Many vehicles actively want their airlocks to be accessible to rescue crews. **HOSTILE** is not like most space-based RPG settings, here piracy is incredibly rare, military conflict does not always end in a boarding action; starships are far more likely to need assistance from another craft. Sliding doors are common. Swing-out hatches are still used for secondary, emergency or maintenance locks, but main locks use sliding doors. That sci-fi staple, the iris valve, is not yet in use for airlocks. Explosive bolts: Many exterior airlock doors are primed with explosive bolts to allow for instant airlock decompression, primarily to allow for rescue or evacuation should the automatic or manual airlock mechanism fail. These bolts can only be fired by keypad code from the flight deck, from the inner door or from the internal airlock control panel.

EXPOSURE

Extreme Temperature

If a character is exposed to the elements, the referee must decide what the local temperature is. Vacuum, in the shade, has a temperature of -270°C (3° above absolute zero), but the sun at varying distances can heat up suits, equipment and hull surfaces. In space, and on worlds without an atmosphere, use the guidelines for exposure to a vacuum. See ***Pressure Loss*** (page 222). On planets and moons with atmospheres, it is easier to determine temperature when a character's suit rips or he is thrown out of an airlock, or someone blows-out the windows on a habitat. Temperatures are in Celsius.

Temperature	Damage	Example
Below -200°	3D6/round	Absolute Zero, Pluto
-200°	2D6/round	Liquid nitrogen
-100°	1D6/round	Ceres
-50°	2D6/hour	Frozen
-25°	1D6/hour	Cold
0°	None	Water freezing point
50°	1D6/hour	Hot
100°	2D6/rd	Inferno
200°	3D6/round	Mercury
500°	4D6/round	Venus
Above 500°	-	Surface of the sun

Poison Atmosphere

Many off-world colonies have appreciable atmospheres but not all are breathable. Walking out of a surface airlock or suffering a suit breach on one of these worlds has the added complication of a poisonous gas being inhaled. However, pressure and temperature differences will probably be far more dangerous to the exposed characters. The referee should apply damage for vacuum or temperature as suits the environment.

Habitat Leaks - On many worlds with noxious atmospheres, a breach in the hull may result in poisonous air leaking in. This is very dangerous. The character must make an Endurance check of 8+ to resist the effects of the poison each minute. If the character fails the Endurance check then he takes damage and must make another Endurance check every minute after. Gases vary from nitrogen, to carbon dioxide to ammonia and many others, but treat damage simply as 1D6.

RADIATION

Radiation can be a real killer in space. Solar storms bathe interplanetary space with energized protons that can reach deadly levels very quickly and some stars and gas giants have particularly deadly radiation belts which should making prolonged travel nearby equally unhealthy. Radiation in **HOSTILE** is measured in Rads. Note that Crew Radiation Hits areassumed to have already penetrated the hull.

Radiation Exposure

Radiation Source	Rads
Hot Zone (close to white dwarf or radioactive gas giant)	High Level per hour
Danger Zone (close to gas giant, star)	Low Level per hour
Minor Solar Flare (duration 1-6 hours)	Low Level per hour
Major Solar Flare (duration 1-6 hours)	High Level per hour
Nuclear Blast	Extreme Level
Crew Radiation Hit (Minor)	High Level
Crew Radiation Hit (Critical)	Extreme Level
Irradiated Area (per hour)	Low/High/Extreme

Exposure Level	Rad Exposure
Low Level	2d6 x 5
High Level	3d6 x 20
Extreme Level	2d6 x 100

Radiation Protection

Subtract the relevant value from the Rad Exposure before totalling up the character's Rad dosage. Roll each hour if the exposure is extended.

Radiation Protection

Protection	Reduction in Rads/per hour
Soft Suit	20
Hard Suit	40
Hostile Environment Suit	90
Hardened Spacecraft Bridge	280
Spacecraft Hull	180
Radiation Shielded Hull	400

Damage From Radiation

Inflict the rolled damage on the character (starting with Endurance). The rads accumulated are then discarded.

Total Rad Exposure	Damage
0-24	None
25-99	1D6
100-1000	2D6
1000+	3D6

Effects of Radiation Damage

Damage from radiation is not quite like that inflicted by a knife or bullet, its effects manifest over time. The severity of the sickness is indicated by the loss of characteristic points. While the rules here are quite clinical and clean, radiation sickness is not, although such unpleasantness may be glossed over as the referee sees fit.

Endurance Remains Above 0: No appreciable affects, the character naturally recovers 1 characteristic point per day.

Endurance 0 (Very Ill): After a number of hours equal to Endurance the character suffers nausea and sickness. Make an Average (0) End roll to recover, or suffer another 1D6 damage and be very ill for 1-3 days. After this time has passed the character naturally recovers 1 characteristic point per day. A medic can assist with a lysophosphatidic acid (LPA) treatment making a Routine (+2) Medical roll to assist and provide a +2 DM to the patient's roll.

Two Characteristics at Zero (Severely Ill): After a number of hours equal to Endurance the character suffers nausea and sickness, internal bleeding and some hair loss. Make a Difficult (-2) End roll or suffer an additional 1D6 damage. Failure means the character is feverish and nauseous, and along with diarrhoea and vomiting, they cannot face the thought of food. Roll each week until the roll is successful, at which point recovery begins and the character recovers 1 characteristic point per week. A medic can assist each week with a lysophosphatidic acid (LPA) treatment, making a Routine (+2) Medical roll to assist and provide a +2 DM to the patient's roll. Severely ill characters lose 1 point of Endurance permanently.

ASTEROID MINING

The mining of small moons and asteroids is often carried out by big business, by giants like Erebus Petrochem, Leyland Energy or Tharsis Mining. But the little guys can get involved to, some are freelancers, hardy independents trying to scout out a mother lode in order to sell the samples and co-ordinates to a big corporation for professional assaying. Of course these big business interests also have their own resource scouts in the Outer Rim and the frontier, but they can't be everywhere at once. The rules in this section provide some mechanism to allow for either corporate resource scouts or freelance prospectors to do some initial mining. There will inevitably be problems and accidents, and this is factored into the rules provided.

How Does Mining in Space Actually Work?

Most mining for metal ores on asteroids and small moons is done via the open cast (or open pit) technique. This method scrapes or digs away any overburden (that is, loose soil or other rock layers) to expose the rock type that the target mineral sits inside. That ore then has to be broken free, transported to a processor for crushing, sieving and then smelting. In the smelter the metal is freed from the ore and the waste ('tailings') are discarded.

Low-G Mining

On Earth a combination of explosives and immense bucket-wheel excavators is used to expose the ore, but in a low-G environment some other technique had to be found. Explosives turn the shattered rock into a cloud of lethal supersonic missiles that destroy spacecraft and equipment, whilst those continuously moving bucket-wheel excavators likewise get clouds of loose material moving freely with nothing to stop them. Modern mining corporations employ chemical lasers to do this work, vaporizing rock overburden or cutting away large slabs that can be pushed or dragged away by mechanical means. Mobile Drill Vessels like the USCS Vancouver mount mining lasers on the highest point of the rig giving them an effective range of several hundred metres, perfect for exploratory mining. Larger mining platforms, like the 100,000-ton Thuringian class as well as permanent mining facilities must employ self-propelled mining lasers like the AMC Dynamic 7100 for this purpose. These 5 ton machines can cut or vaporize rock layers to expose the ore body. Bucket-loaders like the Chevrolet MM are then used to load overburden into huge dump trucks. The 13 ton Matsuyama EH1800 is typical, it drives the waste to a dump site. Most mines grow deeper and deeper to create a vast crater, with roadways cut into the sides to enable the vehicles to reach the exposed ore. Once the overburden is removed the lasers go to work on the ore itself and this is transported to the end of a conveyor by the dump trucks which then rolls it all the way into the processing bay of the facility or drill ship.

Zero-G Mining

Where the techniques explained above work on small moons, they do not work on asteroids. Wheeled vehicles gain no traction on such a small body. Typically a mobile drill rig lands and anchors itself by auguring (drilling) itself into the rock surface. A site within range of the mining lasers is selected and the overburden removed. Often ores are sitting on the surface of an asteroid, indeed, the entire asteroid itself may be nothing less than a loosely conglomerated ore pile! Once the ore is exposed, the rig lifts off and re-locates itself directly over the exposed ore, auguring in once again. Beneath the rig and between the spider-like landing gear, a huge Kevlar/Salar collection hood is extended to ground level and secured manually by individual pitons. Once in place, chemical mining lasers beneath the hull begin cutting up the ore into manageable chunks which cannot float free because they are

A Matsuyama EH1800 thunders past at the open cast mine on La Paz

trapped within the collection hood. An inverted gravity compensation field attracts the ore fragments up into the access manifold where they are pulverized before being fed up into the smelter. This compensator field uses the same technology as the gravity generators used on board starships that produce a 1G environment.

Prospectors use mining drones, which chew up the ore and pass it through the drone body into a collection pipe which feeds the ore directly into the ship's ore bay.

Useful Mining Equipment

Portable Solar Power Array (PSPA): The most basic of mining outposts might simply consist of a habitat and workshop where crews rely on supplies flown in for survival. In this case power is supplied by a PSPA, a solar array that can be carried on-board a lander as cargo to be unpacked, unfolded and extended on the world's surface. It comes with folding solar panels, an inverter, battery, solar tracker and interconnection wiring. The PSPA provides an equivalent powerplant value of 1. The array masses 0.5 tons when packed, and costs $50,000; use of a PSPA allows the habitat to start operating almost immediately.

Fuel Processor: A fuel processor is used to electrolyse melted water ice to create both oxygen and hydrogen; the first can be used for life support, the second for chilling and using as liquid hydrogen fuel for the ship's plasma rocket. One ton of fuel processing equipment can convert 20 tons of water ice into liquid hydrogen per day. One ton of fuel processing gear costs $50,000.

Helium-3 Processor: A helium-3 processor is used to extract valuable helium-3 from the atmosphere of a gas giant. It consists of pumps and refrigeration equipment which liquefy the atmospheric gases. While the liquid methane is discarded, liquid hydrogen is used to pre-cool more incoming gases before also being discarded. The liquid helium is retained, so that the helium-3 isotope can be separated from the more abundant helium-4 isotope. This helium-4 is then discarded, and the helium-3 is retained. One ton of processor can extract 0.1 ton of helium-3 per day. The processor may instead be tasked to create liquid hydrogen fuel at a rate of 5 tons of liquid hydrogen per day per ton of equipment. A ton of processor costs $1M.

Mining Drones: Massing 10 tons, a set of mining drones is the most useful piece of equipment any ship can carry. The set includes three 2 ton mining drones, a 1 ton docking and recharging unit and a 3 ton ore handling unit. The ore unit channels and transports ore from the drones into the cargo or ore bay. Drones process 1d6 x 10 tons of asteroid material per working day and cost $1M.

Mining Laser: Some dedicated mining ships are equipped with a mining laser. In all particulars this resembles the pulse laser described later in this book. It is mounted in a single turret and is used to vaporise overburden allowing the drones access to the ore layers within. Use of a mining laser in conjunction with a set of mining drones allows the drones to process 20-70 tons of ore in a day (1d6+1 x 10 tons), improving efficiency. The laser must be used at a range of 500m or less. The mining laser costs $0.5M.

Smelting Plant: Requiring a crew of six, this 25 ton smelting plant can process asteroid ore gathered by mining drones, separate the gangue (the useless rock) from the metal ore, then roast and melt the ore in an electric or plasma arc furnace. The plant also has a vacuum arc capability for re-melting and refining metals like titanium which require high grades of purity. In one day the smelting plant can produce 1 ton of metal for every 10 tons of ore that is fed into it. Metals treated with vacuum arc re-melting are produced in 2 days. Residual rock waste, or slag, is thrown into space or onto the asteroid's surface. The smelting plant costs $9M.

Micro-Fusion Plant: Each is a complete self-sufficient life support plant used on asteroids, planets and small moons by miners, colonists and scientists. The plant is installed within a 3 ton cargo container-sized unit and built around a 1.5 ton fusion powerplant which will provide electrical power for the outpost as well as recycle water and air. Air and water tanks are included within the unit for this purpose. Without additional water and air tanks, the plant can sustain up to 30 people indefinitely. Cost is $4M; mass 3 tons.

Mission Profile

1 Prospecting - Using telescopes and spectroscopy, asteroids can be prospected from millions of kilometres away. The player characters must identify an asteroid that fulfils their needs, and this is done with a task roll.

Locate a suitable rock for mining: Navigation, 1-6 days, Routine (+2)

Locate a suitable ice chunk: Navigation, 1-6 days, Average (+0)

Locate a suitable source of water & nutrients: Navigation, 1-6 days, Average (+0)

2 Travel to the Rock – Characters must travel to the rock; distance depends on its location within the star system. Once mining is completed, a second asteroid may be located in the same general location, if desired. Travel time to this new rock takes 1d6 x 5 hours, add the following:

Travel by Starship: *60 hours divided by G rating of the ship's drive*
Travel by Small craft: *140 hours*

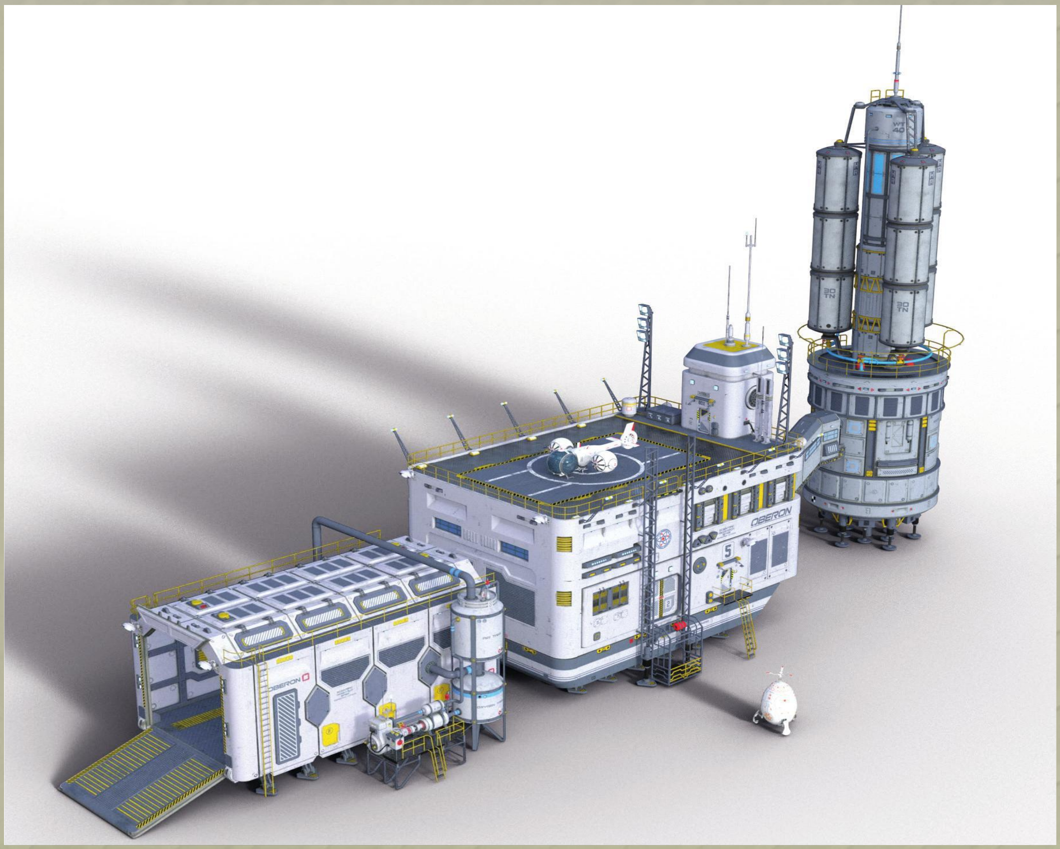
3 Touchdown & Anchor – Touching down on an asteroid requires landing gear. Most dedicated mining vehicles, such as drilling rigs, have heavy duty landing suspension, pitons, harpoons or rock drills that are needed to anchor the vehicle and prevent it from drifting away in the asteroid's pathetic gravity field. It is impossible to touch down on a planetary ring. If a craft is unable to touchdown because of a lack of landing gear, then reduce all drone extraction rolls (see below) by -2.

4 Extraction – Decide what the crew want to extract (minerals, water or agricultural materials). Roll the relevant task. Each mining roll represents a full day of maintenance, preparation, mining and clean-up.

Extracting Minerals: Most star systems have an ample supply of asteroids which makes mining unprofitable and prices very low. Belters look for the very rare asteroids in which valuable materials exist in relatively high purity. Uncommon ores include platinum, rhodium, iridium, osmium, ruthenium, palladium, gold and the naturally occurring alloys of osmiridium and iridosmium. Common ores are aluminium, nickel, iron and copper. Raw materials are sand, gravel and silica used for shielding and as a raw material for manufacturing. Once a potentially profitable asteroid is found and on-site prospecting has begun, roll 2d6 on the Asteroid Yield table; then proceed to the extraction task roll.

ASTEROID YIELD

2d6	Yield	Description
2–5	Icy	Largely made of water ice and other volatiles. Can be mined for 1d6 × 100 displacement tons of water ice which can be sold for $100 per ton if located in the Outer Zone; otherwise treat as Low Yield.
6-8	Low	Worthless rock with a surface veneer of 1d6 × 100 tons of water/ice and 1d6 × 50 tons of volatiles (frozen methane, ammonia, nitrogen and carbon dioxide) will be present if the asteroid is located in the Outer Zone. These can be sold for $500 per ton.
9-11	High	Roll on the High Yield table to determine the contents. 1d6 × 100 tons of water ice and 1d6 × 50 tons of volatiles (frozen methane, ammonia, nitrogen and carbon dioxide) will be present if the asteroid is located in the Outer Zone. These can be sold for $500 per ton.
12	Special	Unusually rare or large deposits. Roll on the Special Yields table.



2d6	High Yield	Tons
2	Basic Ore	1d6 × 5
3	Basic Ore	1d6 × 25
4	Uncommon Ore	1d6 × 5
5	Basic Ore	1d6 × 50
6	Basic Ore	1d6 × 100
7	Uncommon Ore	1d6 × 20
8	Basic Ore	1d6 × 500
9	Uncommon Ore	1d6 × 50
10	Basic Raw Materials	1d6 × 50
11	Uncommon Ore	1d6 × 100
12	Special	

2d6	Special Yield	Tons
2	Alien artefact	*
3	Distress beacon	*
4	Salvage	*
5	Uncommon raw materials	1d6 × 100
6	Uncommon raw materials	1d6 × 25
7	Basic raw materials	1d6 × 100
8	Crystals & gems	1d6 × 25
9	Precious metals	1d6 × 50
10	Crystals & gems	1d6 × 100
11	Biochemicals	1d6 × 50
12	Radioactives	1d6 × 10

* The Referee should determine the exact nature of these finds.

Mine an asteroid & process the ore: Mining, 1-6 hours, Average (0).

Each 10 tons of mining drones installed on a ship can mine 1d6 × 10 tons per day + the Effect of the Mining roll × 5 for each successful mining task.

Extracting Water & Hydrogen: A ship may use mining drones to mine ice from icy asteroids or comets and convert it into unrefined liquid hydrogen fuel and oxygen. Mining water ice from an icy asteroid or comet requires a separate task.

Mine water ice: Mining, 1-6 hours, Average (0).

Each 10 tons of mining drones installed on a ship will mine 1d6 × 10 tons of ice + the Effect of the Mining roll × 5 for each successful mining task.

Extracting Agricultural Materials: A ship equipped with mining drones may obtain the monthly supplies for a hydroponic station on a base or space station by mining asteroids and comets. Extracting enough nutrients and water for a month requires a separate task. Such nutrients include (in order of usefulness) nitrogen, phosphorus, potassium, magnesium, sulphur and calcium.

Mine water & nutrients: Mining, 1-6 hours, Average (0).

5 Problems – At the start of each day of mining activities, the referee should secretly roll for a Mining Problem on 2d6 (see table below). If the mining supervisor makes an Average Mining roll, then add DM+2 to the roll.

Each problem is a roleplaying opportunity, a physical and mental challenge that will require a degree of problem solving as well as a task roll. The referee should adjudicate the subsequent events to fit the situation and the characters. A simple repair may suffice, perhaps the failure is due to something unusual and not yet detected, perhaps the failure cannot easily be repaired and needs drastic action:

cannibalisation of some other equipment, for example. The landslide/cave-in event may trap a drone or even a character who is trying to free an unresponsive drone, it may lead to a chain of other complications, perhaps presaging an asteroid quake, or tipping the ship violently, putting a successful launch in jeopardy. Have fun with these problems, they are intended to be entertaining, and food for adventure, not a pain.

6 Repeat – Continue cycling through **4** and **5**, making new extraction rolls and new problem rolls each day of mining activity. Continue like this until the ore bay is full, a problem stops production, or something more interesting crops up! There is no need to reroll again on the Asteroid Yield Table though.

MINING PROBLEM

2d6	Problem Encountered
2	Injury
3	Sensor Failure
4	Fuel Leak
5	Machinery Failure (processor/smelter/ore handling)
6	Landslide/Cave-in, relocate activities (takes 1 day)
7	Comms Failure (with drones)
8	Drone Failure
9+	No problem

Shana Avrahami, a junior engineer on Isolation, gets off-shift

STARSHIP CONSTRUCTION

9

Excerpt from Starship Technical Manual ICO-8041-5-2218-K:

"When designing a starship, the engineering team must have a clear vision of what the vessel's intended role should be. Typically they will be given a brief from a client, but still, that brief might be vague. Designers must ask themselves a few key questions: What is the job of this vessel? What features will the vessel include that enable it to do that job? How big should it be? There is no such thing as the ship 'that can do everything' - the best starship designs specialize.

Even the best design teams have to take a few steps backward, though. Once the vessel design is finalised and the hull packed with components and fuel, the realization dawns that not everything could be squeezed in. Either something has to go (the inevitable compromise) or the process has to begin again with a bigger hull. The trick, though, is to keep costs down for the client, and the best way of doing that is to use the smallest hull possible – a small hull means smaller and less expensive drives, after all. But saying that, there is no denying the fact that modern commercial starships are huge, somewhat comparable to the ocean-going vessels back on Earth. This is due to economies of scale: building 10 cargo ships, each of 1,000 tons is much less efficient than building a single ship of 10,000 tons."

“So just how big are modern starships? There is a limit, and just like the maritime vessels of Earth which are rated as Panamax (meaning they can fit through the Panama Canal), today’s starships are limited by the capabilities of their port facilities. In 2225, most class A port facilities have an upper limit of 100,000 tons. Whilst tugships and other utility vessels are built to a size of between 6,000 to 15,000 tons, cargo vessels are more likely to be built on hulls of 20,000 to 40,000 tons. Military vessels are smaller than you would expect, few are any bigger than 20,000 tons.”

Starships are designed to perform set roles for their clients. This role is applied to the vessel as a descriptive category used in the ICO’s registration system. The most common of the commercial starship categories are:

BCC	Bulk Cargo Carrier
CCV	Container Carrying Vessel
CSV	Colonial Support Vessel
CTC	Chemical Tank Carrier
ERV	Emergency Response Vessel
EXT	Executive Transport
GSV	Geological Survey Vessel
HL	Heavy Lander
LB	Lifeboat
LGC	Liquefied Gas Carrier
LL	Light Lander
MDV	Mobile Drill Vessel
ML	Medium Lander
MSV	Medical Support Vessel
PSV	Platform Support Vessel
PTC	Petroleum Carrier
RSV	Research Vessel
TSV	Technical Support Vessel
TA	Trans-Atmospheric Vehicle (spaceplane)
TWV	Towing Vessel
UP_	Platform (unpowered): Drill (UPD), Refinery (UPR), Mining UPM), Utility (UPU), Ore (UPO)

An individual starship, once constructed, fitted out, tested and delivered, must be registered with the Interstellar Commerce Organization (ICO). It is awarded a name by the client and a registration number by the ICO. Most vessels carry a prefix to denote the identity of the flag under which it flies, either ECS, USCS or instead the suffix ‘Maru’ if Japanese.

ECS = European Commercial Starship (eg. *ECS Julia Nörsk*)
Maru = Japanese suffix for commercial vessels (eg. *Tanegashima Maru*)
USCS = United States Commercial Starship (eg. *USCS Talkeetna*)

The 20,000 ton bulk ore carrier, Talkeetna owned by Red Giant Transport, for example, might have the full title and registration of USCS Talkeetna BCC-112234. The first three letters of the registration indicate the vessel’s category, whilst the first three numbers of the registration are the identity code of the carrier (112 is Red Giant’s identity code, for example). The final three digits tell the reader how many ships of that category have so far been registered (the Talkeetna is the 234th bulk carrier to be registered with the ICO so far). What does the registration of Nagoya Maru LGC-112003 tell you about the ship in question?

Starship Naming Conventions

The big seven starlines are:

Braniff Interstellar
Colonial Endeavors
ConAm
Frontier Line, Nørsk
Red Giant
Transtar

Each transports huge volumes of cargo across hyperspace in multi-million dollar starships. Most also ferry passengers that are kept in stasis within hypersleep chambers. The way in which starships are named is similar to the way in which modern marine shipping is named. Some starlines try and keep to a theme or to a naming system, some others just go with names suggested when the ICO require the vessel to be registered. This section includes the various naming conventions that exist, as well as a list of example names that the referee can utilise in his game.

Braniff (ICO code: 116) – No convention; examples include: Sigura, Marco Polo, Petro Asia, Isellia, Star Tanker, An Ho, Patriot, Continuity, Integrity.

Colonial Endeavors (ICO code: 080) – Colonial name their vessels after famous port cities or Off-World colonies. Some examples are: Galveston, Hamilton, Singapore, Hong Kong, Prosperity, New Tokyo, Long Beach, San Diego, Brisbane, Great Lakes, Oppenheimer, and Cyclops.

Consolidated American [ConAm] (ICO code: 150) – ConAm has begun to name its vessels after quotes taken from US state mottoes and slogans. Examples include: Islands of Aloha, Pure Michigan, Big Sky Country, Green Mountain, Silver State, New Mexico True, Pacific Wonderland and Forever West.

Frontier Line (ICO code: 180) - No convention; examples include: New Space, Freya, Energy Champion, Energy Advantage, Orwell, Niffelheim, Solomons Spirit, Progress, Global Challenge, Sword of Orion.

Nørsk (ICO code: 172) – Nørsk line always include the word 'Nørsk' in the ship's title, other than that, there is no other convention. Examples include: Julia Nørsk, Nørsk Herald, Rebecca Nørsk, Nørsk Carrier, Nørsk Adventurer, Victoria Nørsk, Nørsk Gold, Ellie Nørsk.

Red Giant (ICO code: 112) – Red Giant include the world 'Giant' in their starship names. Some examples are: Stellar Giant, Blue Giant, Far Giant, Galaxy Giant, Rainbow Giant, Shining Giant, Northern Giant, Courageous Giant.

Transtar (ICO code: 130) – No convention; examples include: Sunshine, Golden Mercury, Eagle Seville, American Endurance, American Glory, Altair, Maju Jaya, Sarah, Kristina, The Venetian.

Military Starship Designations

Starships of the United States Space Command are designed to perform set missions and are designated as such. The USSC fleet catalogue, as well as the hull of the ship itself, will bear a unique hull number made up of mission letter and series number. Hull number V13, for example, denotes the 13th ship to be commissioned into the USSC as a vertical assault carrier. All vessels of 100 tons or greater, whether capable of hyperspace travel or not, are given the prefix USS ('United States Starship') before their name. The very first ship in a new series is designated as the class type and all ships based on that ship will be associated with that class. The USS Alan Shephard V13 Vertical Assault Carrier, for example, was the first of a new 'Shephard Class' which later included the USS John Glenn, the infamous USS Charles Duke and the USS Roger Chaffee.

The starship mission letters are:

Auxiliaries (A): heavy transports, tankers and support vessels

Battle Carrier (B): star system dominators, with a fleet of carried craft

Electronic Support (E): electronic jamming or attack

Space Station (H): orbital station, armed or unarmed

Interdictor (I): area denial cruiser

Communications (N): courier and light passenger transport

Patrol (P): multi-system patrol and customs ship

Recon (R): deep penetration reconnaissance craft

Fast Attack Strike (S): long range attack ship, targeting enemy star systems

Vertical Assault Carrier (V): carrier of US Marine forces to a world's surface

Military Small craft Designations

Small craft (those less than 100 tons) are given designations according to the United States Tri-Service Designation System introduced in 1962, applicable not just to fixed-wing aircraft, but also helicopters, drones, dropships and space shuttles. This uses a letter to denote mission type followed by a number for the specific vehicle model, C-4 is a cargo jet, the fourth type entering service. Vehicles that are not fixed-wing aircraft receive a suffix, so the CH-4 is a cargo helicopter.

The small craft designations are:

Mission Designation	
A	Attack, tactical
B	Strategic attack
C	Cargo
D	Drone director
E	Electronic mission
F	Fighter
H	Search and rescue
K	Tanker
M	Multi-mission
O	Observation
P	Maritime Patrol
R	Recon
S	Anti-Submarine
T	Trainer
U	Utility
W	Weather Recon
X	Research

Vehicle Designation	
D	***Dropship*** – Air-breathing engines, limited to low orbit
H	***Helicopter*** – Rotary-wing aircraft
Q	***Drone*** – Unmanned Aerial Vehicle
S	***Shuttle*** – With plasma rocket, fully space-capable
V	***VTOL*** - Vertical Takeoff/Landing Jet or Tilt-Rotor

CONSTRUCTION BASICS

Starships in **HOSTILE** are generally very big (typically in excess of 5,000 tons). The reason for this is reaction mass; to travel through space every starship uses a fusion plasma drive that uses liquid hydrogen as a reaction mass – lots of it. The 15,000 ton Hercules-class tug that appears in the next chapter, for example, has to haul around 12,000 tons of liquid hydrogen! Another big difference is the method of propulsion. As already mentioned, starships travel through space using a plasma drive, whilst smaller craft (landers, orbital vehicles, drop ships, etc.) employ more conventional rocket motors similar to those in use during the early 21st century. There is no anti-gravity drive, although ships and space stations are fitted with gravity compensators, allowing crews to walk freely around as if they were on Earth.

For the journey to a new star system, ships are able (once they have reached a pre-surveyed hyperspace point) to turn on the hyperdrive and punch through to hyperspace, travelling as far as their life support allows, at a speed fixed by the type or rating of the fitted drive. Rules for managing the reaction drives are included to help determine how long it takes ships to travel between planets in a star system, and whether or not a crew can afford to burn fuel in a planetary re-entry and landing.

Costs

All costs are in American dollars ($), and one million dollars is abbreviated here as $1M. The interstellar economy provides opportunities for the use of standardized and modular designs. Components are often manufactured by different corporations to take advantage of available resources and then assembled at an orbital shipyard to create the final vessel. These orbital shipyards take advantage of modular components and standardized designs to reduce the cost of production; this typically leads to a 10% discount on vessels constructed using the established, licensed designs, such as those described in the next chapter. Fuel and weapon ammunition are not covered by the standard design discount. New, custom-designed ship designs cannot take advantage of this standardized and modular design system. These ships must instead be designed by a technical design bureau, which creates detailed design plans based on a set of specifications provided by the client. Such plans take a month to create, and cost approximately 1% of the final, projected cost of the vessel.

Ship Sections

Most vessels are divided into three primary sections:

The Engineering Section: The Engineering section contains the drives and power plant necessary for proper operation and movement.

The Command Section: The nerve-centre of any ship is the bridge, where the ship is controlled and systems and sensors monitored. The mainframe computer will be located here as will a Combat Information Centre, if the ship is military – and big enough to warrant one. All of these areas are found in the Command Section.

The Main Compartment: The ship's main compartment contains all non-drive features of the ship, including the the staterooms, weaponry, the low passage berths, the cargo hold and other items.

Displacement Tons

Ship hulls as well as other ship components are all designated by their 'displacement volume'. Displacement volume is measured as the volume of space that is displaced by one metric ton of hydrogen, referred to in this design sequence as a displacement ton or simply ton. A ton of hydrogen occupies approximately 13.5 cubic metres, which is generally rounded instead to 14 cubic metres, simply for ease of calculation. When drawing deck-plans of ships, each square on the map measures 1.5 metres by 1.5 metres, to a height of 3m up from the floor – this represents half a ton. But what does it all actually weigh? Comparisons with modern maritime shipping suggest that a displacement ton roughly equals 5,000 metric kilogrammes.

A Note on System Redundancy

Ship systems can take damage for a variety of reasons, becoming disabled or destroyed as damage accumulates. To counter the loss of vital ship systems, some ship designers install multiple versions of certain components. These redundant systems remain inactive until the original system is disabled, with the exception of ship weaponry. When all redundant systems have been disabled, any further damage begins to destroy them, beginning with the primary system.

USS ALABAMA

SHIP DESIGN CHECKLIST

Space ship design follows a very methodical process. It is recommended that the designers make their preliminary decisions on a single sheet, with three columns: the first noting a component, the second its volume (in tons) and the third its cost (in M$). At the bottom of the sheet the totals can be determined, and revised if necessary.

1. Decide on a role
2. Choose a Ship Hull
    a. Note Hull and Structure Points
    b. Determine hull streamlining
    c. Install Armour (optional)
3. Choose powerplant
4. Choose hyperdrive
5. Choose manoeuvre plant
6. Determine powerplant fuel (tonnage equal to pp tonnage)
7. Determine manoeuvre drive fuel (0.1 x Hull size x Mn)
8. Determine bridge
9. Choose ship's computer
10. Choose computer software (if desired)
11. Choose ship's electronics
12. Determine number of required crew
    a. Choose staterooms and low berths
13. Determine additional features
14. Select Ship's Vehicles
    a. Decide to include hanger space or not
15. Determine Weapon Mounts (optional)
    a. Determine Ship Weaponry for the mounts (optional)
16. Allocate remaining space to cargo
17. Assess the design: Is there too much space left-over? Have you run out of space? Go back to modify your choices if needed.
18. When finalized, calculate the total cost and construction time

SHIP HULLS

Ships with drives can mass up to 100,000 tons. Platforms and stations (those vessels without manoeuvre or hyperdrives) can mass up to 5 million tons. Only starships of 100 tons or greater can be fitted with a hyperdrive. In HOSTILE, ships of 10-99 tons are incapable of FTL travel. Many industrial ships are big: it costs a lot to ship goods to other stars, and it is really not worth doing so for only 200-tons or mineral ore or wheat. The base cost of a hull is given in the Hull Table, below. Ships of 5,000 tons can be completed within 36 months or less; larger vessels will require anywhere between 24 and 60 months, depending on shipyard priorities, volume of orders and other factors.

Hull and Structure

HOSTILE starships have Hull and Structure Points. However, as these ships are so vast, the number of Hull and Structure points required to cause damage or destruction become less and less as the ship tonnage increases. If the ship is reduced to zero Structure, the ship is destroyed.

Initial damage is applied to the Hull; once the Hull is breached, further damage goes to the Structure. When all Structure Points have been lost, the ship has been smashed to pieces.

Ship Hull Table

Tonnage	Cost ($M)	Code	Hull Pts	Structure Pts
10	1	S1	0	1
20	1.2	S2	0	1
30	1.3	S3	0	1
40	1.4	S4	0	1
50	1.5	S5	1	1
60	1.6	S6	1	1
70	1.7	S7	1	1
80	1.8	S8	1	1
90	1.9	S9	1	1
100	2	1	1	1
200	8	2	4	4
300	12	3	6	6
400	16	4	8	8
500	32	5	10	10
600	48	6	12	12
700	64	7	14	14
800	80	8	16	16
900	90	9	18	18
1,000	100	A	20	20
2,000	200	B	30	30
3,000	300	C	40	40
4,000	400	D	50	50
5,000	500	E	60	60
6,000	600	F	70	70
7,000	700	G	75	75
8,000	800	H	80	80
9,000	900	J	85	85
10,000	1000	K	90	90
15,000	1500	L	100	100
20,000	2000	M	200	200
30,000	3000	N	200	200
40,000	4000	P	250	250
50,000	5000	Q	200	200
75,000	7500	R	375	375
100,000	10,000	S	500	500
200,000	20,000	T	800	800
300,000	30,000	U	1,200	1,200
400,000	40,000	V	1,600	1,600
500,000	50,000	W	2,000	2,000
700,000	70,000	X	2,333	2,333
900,000	90,000	Y	3,000	3,000
1,000,000	100,000	Z	3,333	3,333

Streamlining

Use these streamlining options:

Hull Configuration	Description	Burns to Land/ Take-off	Cost	Volume
Standard	Unstreamlined. If fitted with landing gear the vessel is reliant on vectored thrust to descend and land. Within an atmosphere, the Pilot must make an Average Pilot roll to avoid damage to ship. *Atmosphere DM's:* -1 Thin; -2 Standard; -3 Dense; -3 Types A-C.	Land from Orbit 2 Take-off to Orbit 2	-	-
Streamlined	Can easily enter an atmosphere using control surfaces as well as vectored thrust. The ship can manoeuvre within an atmosphere.	Land from Orbit 1 Take-off to Orbit 2	+10%	-
Lifting Body	A purely aerodynamic design with advanced control surfaces that is able to glide to a landing point following re-entry in order to save fuel. The ship can manoeuvre within an atmosphere.	Land from Orbit 1 Take-off to Orbit 1	+20%	1%

Armour

The basic hull provides good protection against micrometeoroids, solar flares and radiation; it also provides some protection from anti-ship weaponry. Military craft typically add armour to the hull. Armour is added in 5% increments of the ship's tonnage.

Maximum armour allowed is 8 for titanium diboride and 12 for monocrystalline steel.

For example, a heavily armoured warship might take Monocrystalline Steel armour twice. This would take up 10% of the hull's volume and cost 40% of the base cost of the hull, but give 8 points of armour.

Armour Type	Protection	Cost
Titanium Diboride	2 per 5%, minimum 1 ton	5% of base hull
Monocrystalline Steel	4 per 5%, minimum 1 ton	20% of base hull

Ship Armour Options

The following are options that can be added to a ship's armour:

Ablative: Ablative coating on the hull increases the ship's armour against lasers by 3. Adding Ablative costs $0.1M per ton of hull and can only be added once.

Radiation Shielding: Radiation shielding improves the ship's protection against radiation from both natural sources (solar flares, pulsars) and artificial (nuclear bombs). A ship with radiation shielding decreases the amount of rads absorbed by all crew by 400 rads/hr, treats the bridge as if it is hardened and provides 6 extra armour points against radiation damage from nuclear weapons and particle beams. Radiation shielding costs $0.01M per ton of hull.

Self-Sealing: A self-sealing hull automatically repairs minor breaches such as micrometeoroid impacts, and prevents hull hits from leading to explosive decompression. It costs $0.01M per ton of hull.

Stealth: A stealth coating absorbs radar and LIDAR beams, and also disguises heat emissions. This gives a –4 DM on any Comms rolls to detect or lock onto the ship. Adding Stealth costs $0.1M per ton of hull, and can only be added once.

DRIVES

Hyperdrive (Hn)

A hyperdrive is an interstellar drive that does not have a maximum range – instead, the ship's drive rating (1, 2, 3, 4, 5 or 6) indicates the number of parsecs crossed per week of travel. Speeds are rated at 'parsecs per week'. Hyperdrives do not consume additional fuel, but use electrical power, therefore the ship's powerplant must equal or exceed the rating of the hyperdrive. Hyperspace is entered at one of several hyperspace points in a star system, these are surveyed locations beyond a star's habitable zone. As the hyperspace points move in their orbits, the roll to determine their distance from the mainworld must be made every time the system is entered or exited (see table). Note that the star's luminosity affects the distance of the hyperspace points.

Distance to Nearest Hyperspace Point: 2d6x10 MkM

Stellar Luminosity Class	Description	DM
0	Hypergiants	+12
Ia	Supergiants	+6
Ib	Supergiants	+6
II	Bright Giants	+4
III	Giants	+3
IV	Sub-Giants	+2
V	Dwarfs	0
sd	Sub-Dwarfs	-5
D	White Dwarfs	-6

Manoeuvre Drive (Mn)

In **HOSTILE** the manoeuvre drive is typically a fusion plasma reaction drive powered directly through the fusion powerplant. Reaction mass (fuel: liquid hydrogen or unrefined water) is fed through the fusion reactor which superheats it to plasma state. Small craft use either a liquid chemical rocket, or, if atmospheric, a scramjet drive system. To calculate the fuel requirements see below. Manoeuvre drives are rated as a measure of G (acceleration); a rating of 3 indicates a 3G acceleration (30m/sec^2). Use the drive's Manoeuvre number (Mn) to determine the distance covered by the spaceship in one day. These craft will coast without thrust for the middle-part of the journey and so it is the G-rating during acceleration and deceleration which really determines how long that journey will last. Mn values and travel times using Millions of kilometres (MKM) are given in the table. Every large ship holds enough reaction fuel for 24 burns of reaction burns. See fuel (page 246).

Powerplant (Pn)

The powerplants are fusion based and require small amounts of liquid hydrogen as a coolant (alongside tiny amounts of deuterium/tritium). The standard rules for powerplants can be used. A powerplant rating must be equal or higher to either the hyperdrive or half the ship's manoeuvre drive. Although it has no effect on game-play and serves only as set-dressing, starship powerplant ratings can be thought of as being equivalent to Giga Watts of power output; meaning that a Powerplant 4 ship produces 4 GW.

Drive Table

The number given within the table is the % of hull tonnage required for a drive of that rating.

	Drive Rating							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Hyperdrive	2	3	4	5	6	7	-	-
Manoeuvre Drive	1	1.25	1.5	1.75	2.25	3	3.5	4
Powerplant	1.5	2	2.5	3	3.5	4	4.5	5

Cost Per Ton of Drive

Hyperdrive	$2.0M
Manoeuvre Drive	$0.5M
Powerplant	$2.5M

FUEL REQUIREMENTS

Hyperdrive Fuel: none required

Manoeuvre Drive Fuel: 0.1 x Hull Tonnage x Mn. E.g. a 3,000 ton ship with a 3G drive requires: 0.1 x 3000 x 3 tons of fuel (equating to 900 tons). This provides 24 'Burns' at the reaction drive's rating. Once 24 burns are completed, the fuel tanks are dry!

Powerplant Fuel: Fuel (or coolant) equal in tonnage to the Powerplant tonnage provides for 12 months of operation.

Manoeuvre Carried Out	Burns Required
Leave orbit for trip to another planet	4
Decelerate and enter orbit around another planet	4
Leave orbit for a trip to a local moon	1
Travel out to the Hyperspace Point	4
Coast from Hyperspace Point to mainworld or Gas Giant	-
Small craft/lifting body starship deorbit burn & descent to moon's surface	1
Small craft/lifting body starship ascends to orbit from moon's surface	1
Standard starship deorbit burn & descent to planetary surface	2
Streamlined starship deorbit burn & descent to planetary surface	1
Standard or streamlined starship ascends from planetary surface	2

Note: Minor in-orbit changes and vectoring do not require any thrust-hours of fuel (at the referee's discretion)

BRIDGE

The size of the bridge varies depending on the size of the ship - space required equals 0.5% of the ship's total tonnage (minimum 20 tons). The cost for the ship's bridge is $0.5M per 100 tons of ship. On military vessels, part of the bridge can be designated as a Combat Information Centre (CIC) used to co-ordinate attacks and defenses during hostile engagements. The bridge and the CIC are usually divided into two separate rooms on large warships.

Ship Bridge Options

The following options are available:

Hardened Bridge: A hardened bridge is shielded against radiation attacks. The ship's computer systems are immune to EMP and the number of rads absorbed by the bridge crew is reduced by 400 rads/hr. Hardening a bridge adds 25% to the cost of the bridge. If a ship has radiation shielding installed, it is assumed to be hardened. The size of a hardened bridge is calculated normally.

Detachable Bridge: This bridge design can be ejected from the ship in an emergency to become a lifeboat for the command crew. The bridge has one year's life support with its own micro-fusion reactor, while emergency thrusters give it basic manoeuvring capabilities. A detachable bridge is even capable of soft-landing on a planetary surface to become an emergency base. Detachable bridges may not be fitted to ships of more than 10,000 tons. The bridge is 50% larger than normal and costs twice as much.

SHIP'S COMPUTER

The ship computer is identified by its model number, the table below indicates details of price, capacity, and cost. The minimum sized computer is determined firstly by the ship's hyperdrive rating (a rating of 4 indicates a minimum computer of Model/4). Size also plays a role; see the table below:

Computer	Rating	Cost ($M)	Max Tonnage Allowed for that Computer Model
Model/1	5	0.03	1,000
Model/2	10	0.16	5,000
Model/3	15	$2M	8,000
Model/4	20	5	10,000
Model/5	25	10	15,000
Model/6	30	20	20,000
Model/7	35	30	40,000
Model/8	40	45	50,000
Model/9	50	55	75,000
Model/10	60	68	100,000
Model/11	70	80	200,000
Model/12	80	100	300,000
Model/13	90	110	400,000
Model/14	100	130	500,000

Ship Computer Options

The following option is available for the ship's computer:

Hardened Systems (fib): A computer and its connections can be hardened against attack by electromagnetic pulse weapons. A hardened system is immune to EMP, but costs 50% more.

SHIP ELECTRONICS

A ship comes with a basic communications, sensor and emissions-control electronics suite, but more advanced systems can be installed.

The Dice Modifier applies to jamming and counter-jamming attempts.

System	DM	Includes	Tons	Cost
Standard	–4	Radar, Lidar	Included in bridge	Included in bridge
Basic Civilian	–2	Radar, Lidar	1	$0.05M
Basic Military	+0	Radar, Lidar, Jammers	2	$1M
Advanced	+1	Radar, Lidar, Jammers	3	$2M
Very Advanced	+2	Radar, Lidar, Jammers,	5	$4M

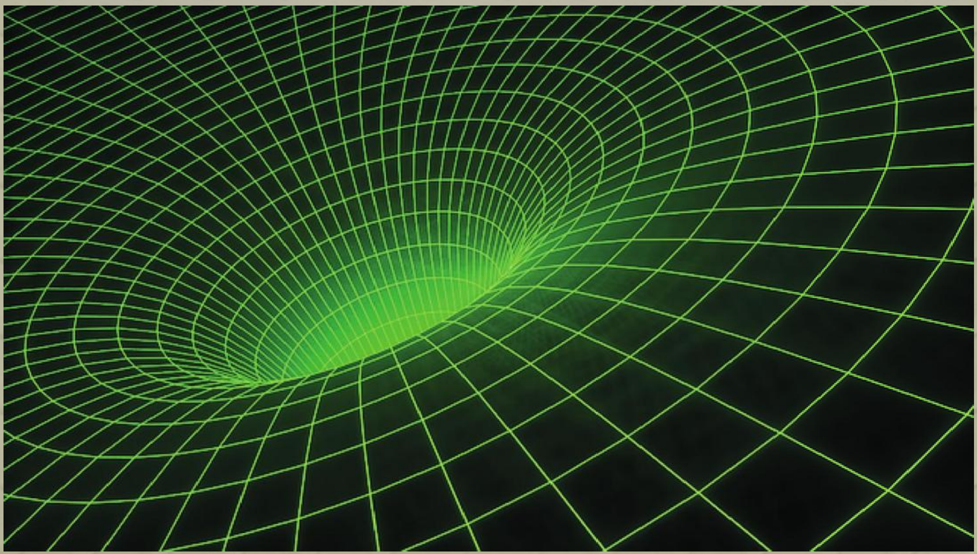
Radar/Lidar detects physical objects. It can be active or passive. If a ship is using active sensors, it is easier to detect (+2 DM to Comms checks) but detects more about its surroundings. Jammers can jam or counter-jam radio communications and sensor locks.

Ship Electronics Options
The following options are available for ship's electronics.

Survey Sensors: Survey sensors integrate a suite of probe drones and deployable satellites into the sensor system and are optimised for scanning a world's surface in 1-3 days with an Average (0) Navigation roll. 10 tons, $10M
Countermeasures Suite: A countermeasures suite is specifically designed for jamming enemy transmissions with an Average (0) Comms roll. It is functionally equivalent to an advanced sensor suite but has a +4 DM for jamming attempts. 7 tons, $6M

Improved Signal Processing: Improved signal processing provides a +2 DM to sensor tasks. However, this comes at a cost of increased vulnerability to jamming, with a -2 to resist jamming. 1 ton, $4M

Distributed Arrays: This component multiplies the weight and cost of a sensor suite by 5 times. By using multiple hull mounted arrays in an integrated computer controlled arrangement, it is possible to increase the basic detection range from 1 million km to 2 million km. This modification cannot be added to standard sensors and can only be added to ships of 5,000 tons displacement or more
.



SHIP'S CREW

Command: Any ship with a crew of twenty or more requires additional command personnel. In this case the designers should allocate one commanding officer, one executive officer, one support officer and two admin staff. The support officer might well be an important officer in charge of logistics or drilling operations, but admin staff are also needed to keep the busy world of the military or industrial ship running.

Pilot: The pilot controls all of the ship movements and maneuvers. Every ship requires a pilot although some vessels, particularly military, carry up to three in order that they can rotate shifts or serve as replacements due to combat losses. Pilots come into their own during key phases of flight, and the station can be unmanned for long periods.

Navigator: The navigator plots complex in-system trajectories for the reaction drive, as well as hyperspace routes to interstellar destinations. Every ship displacing 200 tons of more requires a navigator, although some larger vessels (particularly military) carry a back-up that can serve as a replacement due to combat loss or in order to work in shifts.

Sensor Operator: Sensor operators operate the scanners, telescopes and communication equipment, most also maintain and operate the computer system and serve as 'systems operators'. All ships of 1,000 tons or larger must carry a sensor operator. Some vessels, particularly exploration or military craft, carry more than one operator in order that they can rotate shifts, serve as replacements due to combat losses or be tasked with a specific type of sensor.

Engineer: Engineers are responsible for the maintenance, regulation and operation of the powerplant, hyperdrive and reaction motor. They must also deal with general ship maintenance. Any ship of 200 tons or greater must have one engineer on board per 1000 tons of drive (or part thereof). As with other crew positions, large industrial vessels or military craft may include many more engineers in order to keep a continuous engineering presence, or to replace combat losses. If there is more than one engineer, then the most senior or experienced is designated the Chief Engineer and his associates are ranked accordingly as Assistant Engineers.

Steward: A steward attends to the need of crew and passengers (if carried) as well as to senior staff on board. A military craft or industrial vessel will carry stewards who run the laundry, man the canteen and (in the American sector) the PX – the Postal Exchange, an on-board store or commissary. There must be one steward per thirty crew-members if the vessel spends any appreciable time out of hyperspace. Marines and other on-board troops take care of their own cooking and laundry requirements. Most small-crew starships manage their own catering and laundry. If there is more than one steward, then the most senior or experienced is designated the Purser and his associates are ranked accordingly as Stewards.

Medic: Each starship (capable of hyperspace travel) or spaceship over 5,000 tons (that is also intended for long duration missions) must carry a medic (Medical 1 skill or better). In addition, there should generally be additional medics onboard if the crew is large. Assume one medic per 90 crew or passengers (or part thereof). For example, a drill-rig with 146 people onboard would need a complement of 2 dedicated medics. One might be a doctor, the other a nurse. If there is more than one medic, then the most senior or experienced is designated the Ship's Doctor.

Weapons Operator: Every weapon mount, whether a bay, turret or barbette, requires that a weapon operator be aboard to control and maintain it. The operator does not sit 'in' the turret like some World War Two air gunner, but instead mans a Combat Information Center (CIC) at the heart of the warship, from where he can direct his weapon. If there is more than one weapons operator then the most senior or experienced is designated as the Tactical Officer (if commissioned) or Chief Weapons Operator (if not).

Shuttle Pilot: Each shuttle, lander or important carried spacecraft will usually have a dedicated pilot as part of the crew. This does not apply to lifeboats or EEVs, and some starship operators go so far as to combine the role of rarely-needed shuttle pilot with that of another crewmember.

Marine: Military craft may include a small detachment of combat infantrymen (typically marines) that can serve as on-planet protection, as well as act as a boarding party. Large assault ships may carry hundreds of marines to combat zones. US Marine squads are made up of three 4-man fire-teams and require a commander (a sergeant). Off-World squads working completely autonomously onboard ship may also have a Lieutenant in over-all command. He can command up to three Marine squads (forming a platoon). A Lieutenant commanding a platoon will be assisted by a staff sergeant.

Scientist: An exploration vessel will include scientists as part of its crew. The designers must decide how many scientists are needed, based on the lab space allocated and the mission to be accomplished. If there is more than one scientist then the most senior or experienced is designated as the Chief Scientist (or drill manager).

Loadmaster: Some ships require the services of a dedicated loadmaster, who can direct ground-based loading crews, calculate weights, volumes and loading/unloading priorities. Often these tasks are carried out by the Second Officer of a commercial starship. Military craft, or container ships, may however require a dedicated loadmaster who manages the cargo deck and drives any cargo-handling vehicles carried on-board.

Miner: Miners must be allocated by the designer based on the needs of the ship. If there is more than one miner then the most senior or experienced is designated as the Tool-Pusher (drill manager).

Other: Other crew positions may be created by the designers to serve functions not indicated within these guidelines.

ACCOMODATION

Staterooms

Each stateroom is sufficient for one person, displaces 4 tons, and costs $500,000. No stateroom can contain more than two persons as it would strain the ship's life support equipment. The tonnage and cost of the staterooms includes the life support systems needed to keep the crew alive. Some ships install double occupancy staterooms, usually for miners, scientists, marines or for lots of weapons operators. They still displace 4 tons and cost $500,000.

Hypersleep Pod

Hypersleep stasis pods must be included for every human being onboard a hyperdrive-equipped starship; epilepsy, madness, insanity or coma will affect any living creature passing through hyperspace that is not protected by stasis. One hypersleep pod carries one crewman or passenger, costs $50,000, and displaces one-half ton.

Barracks

A barracks takes up 2 tons per marine or miner, and costs $0.1M per occupant. Barracks can only be used to accommodate troops intended for boarding or assault operations, or for miners on short contracts. Most barracks are supplied by Stack-Racks™.

Canteens, Mess Halls, Freshers etc
Each stateroom takes up only 3 tons on a deckplan, with the extra space given over to corridors, a dining area/mess hall/canteen etc. Public freshers (toilets and washrooms) as well as supply lockers and a laundry room will also be provided out of this extra tonnage if needed. Likewise, barracks also come with some of this space allocated for public use.

ADDITIONAL SHIP COMPONENTS

The following are examples of additional ship components that might prove useful for certain ship designs.

Armoury
Ships carrying a large number of marines or soldiers can benefit from an Armoury, a specialized weapons store. An Armoury can only be accessed by those with the correct codes (usually the ship's senior officers and security team) and contains a wide variety of weapons. In game terms, an Armoury has enough pistols for the crew, enough rifles for any Marines, and a selection of other military equipment like grenades, combat Armour and communications equipment. A general Armoury for a spacecraft costs $0.5M and takes up 2 tons of space. Where military vessels are concerned, the number of Armouries built into the ship's design is based on crew size. One Armoury is installed for either every 50 crew members, or every 10 marines, in order to provide adequate storage for equipment, weapons and ammunition.

Briefing Room
A specialized briefing room is useful on military cruisers and mercenary ships, where teams can discuss plans or meet with clients privately. A briefing room gives a +1 DM to Tactics checks made when planning missions on board ship. Ships with command bridges and fighter squadrons require additional briefing rooms and facilities. Industrial or commercial vessels may install a briefing room as a planning center or operations room. It requires 4 tons and costs $500,000.

Cargo Hold
The design plan must indicate cargo capacity. There is no cost for this but cargo carried may not exceed cargo capacity. Any space left over after all systems have been installed may be allocated to cargo space. Some ships carry large empty tanks for petroleum or gas, others may be equipped with bulk cargo holds for cargoes such as ore, coal or wheat. These release their cargo through gates located at the bottom of the hold to drop on to conveyor belts running beneath the cargo area. The bulk cargo is then transported on an elevating system to the upper hull surface for off-loading through one or more discharge boom conveyors (see below). Most ships are fitted with a more conventional cargo deck for the transport of ICO containers or (less commonly) palletized goods. These decks have fittings for the easy movement of ICO containers or pallets and nearly always include a small internal ceiling crane for lifting and moving heavy cargoes around the cargo area. Cargo decks are typically sealed and able to be depressurized, they will also be fitted with smoke alarms and halon gas extinguishers. Decide on the type of cargo hold at the design stage: deck, bulk cargo or tank. Some large ships carry their own cargo handling equipment (see page 252).

Cargo Handling Equipment

Most ships have some form of cargo doors, ramps and/or industrial-sized lifts in order to move cargo from stations or loading docks up into the ship cargo hold – and back again. Sometimes more is needed.

- **Discharge Boom Conveyor** – A tubular, telescoping arm containing internal conveyor systems for rapidly loading and unloading bulk cargoes like ore, wheat or coal. Transfers 2000 tons of bulk cargo per hour. $0.6M, 150 tons

- **Overhead Crane, Large** – Onboard, side-mounted telescoping crane for offloading standard shipping containers without the need for advanced port facilities. $1.25M, 125 tons.

- **Overhead Crane, Standard** – Onboard, side-mounted telescoping crane for offloading standard shipping containers without the need for advanced port facilities. $0.75M, 40 tons.

- **Liquid Transfer Manifold** – Required on vessels that carry chemicals, petroleum or liquefied gas, in order that the cargo can be piped off or on. The manifold is an elaborate pumping system beneath a set of pipe connectors and valves. Arms from the portside swing over to connect to the manifold and begin on or off-loading the liquid into tanks. Tonnage required is 1% of the total fluid cargo (minimum 1 ton); cost is $0.01M per ton of manifold.

- **Cargo Lift, Small** – An industrial cargo lift capable of raising and lowering up to 10 tons of cargo in one go. 1 ton, $0.05M.

- **Cargo Lift, Large** – An industrial cargo lift capable of raising and lowering up to 36 tons of cargo in one go. 3 tons, $0.10M.

Cargo Handling Vehicles

Some cargo vessels, designed to visit poorly-equipped frontier starports, carry their own set of cargo handling and ground support vehicles. The following are representative:

- **Aerodyne CLT-15 Cargo-loader**– A wheeled container-carrier, powered by a Gulfstar K27 Fuel Cell, that is used on many starport ramps. It can carry to the pad a single 3 ton intermodal container, raise it to a cargo hatch (up to 6m off the tarmac) and using powered rollers, slide the box into the ship's hold. It is driven from a small cab that is mounted on the vehicle's side. $56,000. 3 tons.

- **General Exoframes GE9 Workloader** – A powered exo-skeleton operating on a Gulfstar K24 Fuel Cell that features two hydraulic vice manipulators on the end of each arm. With its legged, walking design, it serves as a great machine for varied loading tasks, loading in confined areas or over rough terrain. The Loader has a single operator and it can lift up to 4000 kg. or a single 1-ton ICO container. $50,000. 0.5 ton.

- **Matsuyama Reachstacker RS1000** – A wide wheel-base cargo mover operating on a Northinghouse Transmat 310kw Gas Turbine with a single powerful telescoping boom ending in clamps that allow it to pick up, manipulate and rotate standard 1-ton, 2-ton and 3-ton cargo containers. It has a crew of one with an additional jump-seat, a 167kg tool bay and a reach of 15m. $80,000. 3 tons.

- **Voroncovo Forklift 4 Series** – A compact four-wheeled cargo mover operating on a Gulfstar K24 Fuel Cell. It has a crew of one and can lift 2,000kg of palletized cargo up to 4.5m. $7,000. 0.75 ton.

Docking Clamp

A docking clamp firmly attaches another ship or an industrial platform to the ship, enabling to move and manoeuvre as one. The size and cost of these clamps varies with the loading it is designed to take:

DOCKING CLAMP

Maximum Attached Load	Clamp Tonnage	Clamp Cost ($M)
40 – 99 tons	5	1
100 – 4999 tons	20	4
5000 - 19,000 tons	50	8
20,000 – 199,999 tons	100	12
200,000 – 999,999 tons	150	16
1,000,000 – 5,000,000 tons	250	20

Detention Cells

Found primarily on military and government vessels, a pair of detention cells is used to hold two prisoners. A detention cell displaces 2 tons and costs $0.25M.

Dump Box

A dump box is a detachable cargo section (technically termed a 'module') that is capable of atmospheric re-entry and soft-landing. Once landed it cannot easily be returned to orbit. Dump boxes are one-use items, typically used to deliver very large construction materials for the establishment of colonies or mining installations, or as terraforming modules filled with machinery, diggers and bulk agricultural supplies. Use of these devices allows for the delivery of prefabricated parts much too large to be transferred to a shuttle's cargo deck. They are primarily used by ships which are not equipped with landing gear, or whose owners do not want their standard configuration vessels to attempt a surface landing. Dump boxes can be any size – starting at the minimum size of 100 tons. A basic 10% of the dump box tonnage must be devoted to a de-orbit reaction drive, retro-rockets, parachutes and an inflatable ablative heat-shield. The box itself, and the associated re-entry and landing equipment, costs $0.01M per ton of dump box – this does not include any associated cargoes! Dump boxes must be circular in plan.

Fuel Scoops

Fuel scoops allow an unstreamlined ship to gather unrefined fuel from a gas giant. Streamlined ships have fuel scoops built in. Adding scoops costs $1M and requires no tonnage.

Fuel Processors

Fuel processors are able to take unrefined fuel from a gas giant or water ocean and convert it into refined liquid hydrogen fuel. To convert 20 tons of unrefined fuel in one day, one ton of fuel processor is needed. A ton of fuel processing equipment costs $0.05M.

Grappling Arm

An extendable remote manipulator arm, 18m long and featuring four universal joints. It is remotely operated within the vessel and can manipulate objects weighing as much as 10 tons easily. $1M. 2 tons

Laboratory

Space allocated to laboratories can be used for research and experimentation. Each four tons of lab space allows a pair of scientists to perform research on board ship. The cost for research equipment varies depending on the type of research undertaken, but is generally around $1M per 4 tons.

Landing Gear

Includes both vectored thrust nozzles and heavy duty landing legs that can take the full loaded weight of the ship. Any ship wanting to make planetary landings, whether Standard, Streamlined or Lifting Body, must be equipped with landing gear. Often elevators are built into the legs to allow a descent from the ship itself (due to the large size and high ground clearance of most starships). Requires 1% of the Hull tonnage, Cost $1M per ton of landing gear.

Medical Facilities

For any vessel away from its home planet for weeks-on-end, the inclusion of a medical facility is invaluable. Choose from either a Medbay, Small Infirmary, Large Infirmary or Hospital.

- **Autodoc**: A specialized, immobile medical robot able to hold a single, prone patient. It can provide paramedic aid and some basic surgical and scanning functions.$0.1M, 0.5 ton.

- **Medbay:** Suitable for crews numbering less than 30, the medbay comprises a 4 ton medical surgery with a single bed, pharmaceutical cabinets, a workstation and an autodoc. From this single room, a medic can consult with patients, perform scans with the autodoc, prescribe medicines and even carry out simple surgical procedures. $1M, 4 tons.

- **Infirmary, Small:** Suitable for crews numbering 30 or more, the infirmary facilities are larger than the medlab and provide the resources to analyze and treat a whole range of medical problems. It includes an autodoc. The small infirmary has 2 beds and requires one full-time medic and at least one other part-time crewmember onboard with Medical-1. $2M, 8 tons.

- **Infirmary, Large:** Suitable for crews numbering over 100, the infirmary facilities are able to cope with several injured or sick patients at once. Many mining facilities, military ships and industrial rigs are fitted with large infirmaries. It includes an autodoc. The large infirmary has 4 beds and requires two full-time medics and at least two other part-time crewmembers onboard with Medicine-1. $3M, 16 tons.

- **Hospital:** A full-equipped hospital is not some stand-by medical area on a routine starship, this is a dedicated establishment, perhaps on a colony world or military hospital ship, or some corporate research vessel. Exactly how big this hospital is, should be determined by the designer. It comes in blocks of 20 tons. Each 20 ton block of hospital costs $2M, holds beds for 4 patients, one autodoc and requires 3 full time medical staff. When trying to determine what these staff-members do, assume that 25% of them are doctors, 10% of them are technicians and the rest (65%) are nurses. A technician dispenses drugs, operates scanners, carries out blood-and other lab tests, etc. A 200-ton hospital, for example, will require 30 staff: 7 of whom will be doctors, 3 of whom will be med-techs and the rest (20) will be nurses. This 200-ton hospital could treat 40 patients simultaneously.

Office

An office might be required by the captain and exec, but also by mining managers, scientists and so on. Several people or officers can rotate in an out, sharing the office space. The captain's office can serve as a meeting or 'ready' room, for talking privately with crewmen, dressing them down, etc. Infirmaries already include an office for the doctor. Each office is 2 tons and costs $0.25M.

Ship's Locker

Every ship has a ship's locker, provided at no cost. Typical equipment carried aboard will include protective clothing, vacc suits, weapons such as shotguns or pistols, ammunition, compasses, survival aids, and portable shelters. The contents of the locker are defined only when they need to be used, but they always contains vacc suits, surface masks and other useful items. The ship's locker is usually protected by a card lock used by the ship's officers.

Staging Area

Sometimes ship crews just need open space for assembling or for the temporary laying out of equipment or supplies. These staging areas are typically placed adjacent to airlocks, cargo bays, hangers and engineering sections. They do not have to be large to succeed in their purpose. A platoon of Marines can effectively gear up and assemble ready for boarding a shuttle or passing through a boarding hatch in a 5 ton staging area. These areas are most often used onboard military craft. They have no associated cost.

Vault

A vault is a special Armoured chamber in the heart of a spacecraft, designed to survive attacks that would annihilate the rest of the ship. A vault has another four Hull and Structure points that only come into play when the ship housing the vault is destroyed. A vault can contain cargo, staterooms or any other internal components equivalent up to 6 tons. A vault requires 12 tons of space and costs $6M.

SHIP'S VEHICLES

A starship may carry small craft such as lifeboats, shuttles, emergency escape vehicles (EEVs) and even more mundane vehicles such as jeeps or all-terrain vehicles. These will, by default, be fitted externally or in tight, form-fitting compartments.

A vehicle hanger can be included which allows for repairs and the maintenance of small craft when they are back on the ship. The hangar includes spare parts and specialized testing and repair equipment for the stored craft. It does not include the cost of the vehicles or drones. A custom hangar takes up tonnage equal to the tonnage of the vehicle to be stored, plus 30% but incurs no additional costs. A hanger for a 30 ton ship's boat, for example, will take up 39 tons (and include space for the craft, naturally).

Vehicles: For details on the various vehicles, please see the vehicle section of the equipment chapter, starting on page 271.

Emergency Escape Vehicles: These Emergency Escape Vehicles (EEVs) can be fitted in order to evacuate crew and passengers from a severely damaged starship. They are not in widespread use due to the lack of safe havens for evacuees who find themselves in deep space. There are four types:

Class A – Individual ejection and re-entry pods, requires the user wear a vacc suit. No survival kit included. Will deploy parachute after re-entry to make a soft, landing.
Class B – Dedicated escape and re-entry pods. These include supplies and survival kits.
Class C – Lifeboats capable of being used as shuttles and runabouts.
Class D – Detachable 'modules', part of the starship itself.

EEVs are describe in more detail, starting on page 273.

Small Craft: All small craft are hangered either in or on the ship's hull and used to carry out errands and land on moons or asteroids as well as other duties. The small craft in the table are are detailed starting on page 273.

Mining Drones: Mining drones allow a ship to mine asteroids. Each set of mining drones takes up ten tons, and allows the ship to process 1D6x10 tons of asteroid per working day. The tonnage allocated includes ore handling machinery, allowing the ship to take on ore and transfer it to the cargo bay.

Probe Drones: Probe drones are for surveying planetary surfaces. Each ton of probe drones contains five drones. Probe drones can be dropped from orbit in disposable entry shells but must be recovered manually. Probe drones are also capable of surveying orbiting satellites, derelicts and other space debris. They can also be used as communications relays.

Repair Robots: Shipboard repair robots are small machines that carry a variety of welding and cutting tools. Their small size allows them to reach nearly all parts of a facility or starship to carry out maintenance or make battlefield repairs (making one Average (0) damage control check per space combat round).

Vehicles	Tons	Installation Cost ($M)
Quad-Track	0.75	0.004
ATV	10	0.05
Colonial Tractor	8	0.06
Off-Road Vehicle	2	0.010
Military APC	5	0.1
Military Jeep	3	0.03
Excavator	3	0.04
Utility Jump Jet	4	0.3
Spaceplane	40	3.0
Dropship	20	4.0
Emergney Escape Vehicles	**Tons**	**Installation Cost ($M)**
1-man Escape Pod	0.5	0.05
8-man Escape Pod	10	4.70
7-man Life Boat	20	5.43
4-man VIP Escape Module	50	12.99
Small Craft	**Tons**	**Installation Cost ($M)**
Ship's Boat	30	9.15
Gunboat	30	12.78
Modular Shuttle	50	12.48
Expedition Lander	90	21.67
Heavy Lift Shuttle	90	17.55
Drones	**Tons**	**Installation Cost ($M)**
Mining Drones	10	1
Probe Drones (5)	1	0.2
Repair Robots	1% of ship's hull	0.2 per ton

WEAPON MOUNTS

A ship has one hardpoint per 100 tons of ship and weapon systems takes up some of these hardpoints. No tonnage is required in **HOSTILE** for fire control.

Weapon Mount	Hardpoints Required
Turret	1
Barbette	1
50-ton Bay	5
100-ton	10

A weapon system may include multiple weapons – for example, a triple turret can hold contains three lasers, three missile launchers, three sandcasters or some combination of those three weapons. There are four types of space-based weapon systems:

- **Turrets**: A remote weapon station on the hull usually capable of a 360° field of fire. The weapon operator sits in the Combat Information Centre (CIC). or on the bridge.
- **Barbettes**: Larger and more capacious types of turret.
- **50-ton Bays**: Large weapon mounts that occupy some internal space, and that do not have free rotation. Either used as a missile launch facility or the mount for a heavy direct-fire system like a railgun. These direct fire weapons require the ship itself to rotate somewhat to bring the bay to bear on the enemy.
- **100-ton Bays:** Larger versions of the 50-ton bay.

Turrets

One turret may be attached to each hardpoint on the ship. If a turret is installed, then one ton of space must be allocated to fire control systems:

Weapon	Tons	Cost ($M)
Single Turret	1	0.2
Double Turret	1	0.5
Triple Turret	1	1
Pop-Up Turret	2	+1
Fixed Mounting	0	x 0.5

Single, Double and **Triple** turrets can hold one, two or three weapons.

Pop-Up is a modification that can be applied to any type of turret – the turret is concealed in a pod or recess on the hull, and is detectable only when deployed. A ship with all its weapons in pop-up turrets looks unarmed to a casual sensor scan.Cost $1M.

Fixed Mounting weapons cannot move, are limited to firing in one direction (normally straight ahead), and are found mainly on fighters. A fixed mounting costs half as much as a turret of the same type, so a single fixed mounting costs $0.1M, a double fixed mounting costs $0.25M, and a triple fixed mounting costs $0.5M.

No launcher includes ammunition in its purchase cost. Missiles, torpedoes and so forth must be purchased separately.

TURRET WEAPONS

Weapon	Optimum Range	Damage	Cost ($M)	Notes
SRAM Missile Rack	Any	Depends on missile	0.75	3 shot
Pulse Laser	Short	1D6+2	0.5	
CML	Special	Special	0.25	3 shots
Beam Laser	Medium	1D6	1	

SRM Missile racks launch self-propelled Short Range Attack Missiles designed to explode on impact. Each rack can launch 3 SRAMs before requiring reloading from an internal magazine (which must be installed separately by the ship designer).

Pulse lasers fire short, rapid bursts of intense energy at short range.

Countermeasure Launchers (CMLs) referred to as 'sand' in Cepheus Engine rules, CMLs use anti-laser chaff and also attempt to confuse SRAM attacks by a combination of anti-radiation and as well as IR flares. CMLs require ammunition. Twenty additional CML munitions take up one ton of space and cost $10,000.

Beam lasers fire a continuous stream of intense energy.

Barbettes

Barbettes are semi-recessed and protected heavy weapons stations. Barbettes can mount either a singe railgun or a launcher for a single Autonomous Kill Vehicle (AKV), a type of large, powerful and destructive missile. Barbettes take up 5 tons of space and require one hardpoint.

BARBETTES

Weapon	Optimum Range	Damage	Tonnage	Cost ($M)	Ammo
Railgun	Short	3D6	5	4	20 shots/$20,000
AKV Launcher	Any	By missile	5	4	2 /$ varies

AKVs are large, autonomous missiles (see below), The AKV barbette can launch one AKV per turn.

Railgun fires single shots and has 20 shots available

50-ton Bays

Bay weapons are much larger than turrets, and take up 50 tons of space and five hard points.

50-ton BAY WEAPONS

Weapon	Range	Damage	Cost ($M)
AKV Launcher x3	Any	By missile	12
SRAM Missile Bank	Any	Launches a flight of twelve missiles	12
Particle Beam	Long	6D6 + 1 radiation hit	20
Railgun	Short	3D6 (+1D6 burst)	30

AKVs are large, autonomous missiles (see below). The 50 ton AKV bay can launch three AKV's simultaneously and includes 3 more AKVs for a second salvo.

SRAM Missile banks fire flights of twelve missiles at a time.

Particle beam bays fire a powerful beam of subatomic particles. Cannot fire at Short range.

Railgun fires 5 round bursts and has 200 shots.

100-ton Bays

These bay weapons are much larger than turrets, and take up 100 tons of space and ten hard points.

100-ton BAY WEAPONS

Weapon	Range	Damage	Cost ($M)
AKV Launcher x6	Any	By missile	24
SRAM Missile Bank	Any	Launches a flight of 24 missiles	24
Particle Beam	Long	9D6 + 1 radiation hit	40
Railgun	Short	3D6 (+2d6 burst)	60

AKVs are large, autonomous missiles (see page 261). The 100 ton AKV bay can launch six AKV's simultaneously.

SRAM Missile banks fire flights of twenty-four missiles at a time.

Particle beam bays fire a powerful beam of subatomic particles. Cannot fire at Short range.

Railgun fires 10 round bursts and has 400 shots.

SHIP WEAPONRY

SRAM Missiles

SRAM missiles are reaction-rocket weapons that are self-propelled or directed by remote control, carrying a conventional or nuclear explosive and exploding in close proximity to the target, but rarely if ever impacting with it. They are termed 'short range' attack missiles to differentiate them from the ship-killing AKVs (see below). They may be fired from missile racks mounted in turrets or from bay-mounted missile banks. Twelve missiles in a magazine take up one ton of space. There are three common types of missiles: Standard (continuous-rod warhead), Smart (standard missile with adaptive protocols) and Nuclear (nuclear shaped-charge warhead). A fourth type, Anti-armour, may be used by ground support small craft.

Each **Standard** missile is around 80 kg in weight, similar in size and killing potential to the modern AIM-9X Sidewinder used by the USAF. They generally carry continuous-rod warheads (where steel rods are packed together, yet welded at alternate ends, the detonation forcing rods to open into a wide, high velocity circle of hull-cutting steel), they actively guide themselves using IR sensors and use limited numbers of burns to alter course if needed. **Nuclear** missiles are low-yield, around 25 tons of TNT. They are not like modern nuclear bombs because nukes in space create little blast effect, no shrapnel and the intensity of their deadly X-rays dissipate rapidly in a vacuum. Instead nuclear missiles get in close, detonate and direct all of their blast forward into a tungsten shaped charge which becomes an ionized tungsten plasma, traveling at high velocity (200 km/second). If they strike a hit, nuclear missiles inflict 2D6 on the ship damage table, as well as a free single radiation hit. **Smart** missiles in **HOSTILE** use sophisticated AI programming to carry out evasion manoeuvres as they close in, in addition they are coated by an ablative anti-laser jacket. They can be jammed by the defending spacecraft. Some small craft may load M30 Avenger **Anti-armour** guided missiles into the SRAM racks instead, these are poor anti-ship weapons, but provide the small craft with an ability to strike bunkers, tanks and other armoured vehicles in support of ground troops doing 9D6 damage and ignoring 18 points of armour.

SRAM MISSILE TYPES

Missile Type	Damage	Cost per Missile
Nuclear	2D6 + 1 radiation hit	$45,000
Continuous-Rod	1D6	$15,000
Smart	1D6	$25,000
Anti-Armour	1D6-2	$5,000

Railguns

Railguns use a coil of electromagnets to accelerate solid metal darts relying on kinetic energy to damage the intended target. These are often used to attack targets on predictable trajectories. Railguns are not as effective in space combat as directed energy weapons and missiles, but do have some tactical advantages as it is very difficult for a target vehicle's weapons to counter an incoming very high velocity metal projectile. Railgun barbettes are superb heavy point defence weapons and can only be used at short range or less. A 50 ton railgun bay consists of a powerful auto-railgun. It can deal 4D6 damage on each successful 5-rd burst, and includes space for 200 shots of ammunition ($20,000). A 100-ton auto-railgun bay can fire 10-rd bursts for 5D6 damage and carries 400 rounds of ammunition ($40,000).

Autonomous Kill Vehicles (AKVs)

AKVs (Autonomous Kill Vehicles) are large 2.5 ton missiles with powerful starship or space station killing capabilities. The warheads available for these weapons include Kinetic Kill, Nuclear, X-Ray Laser and Precision Ground Strike. Considered to be true ship killers with the ability to inflict tremendous destructive force against an enemy combatant. Like smart missiles, they can be defended against using standard anti-missile countermeasures. AKVs are purchased in two-shot loads massing five tons which fit into the barbette. Barbettes can launch one AKV per turn. With the exception of the Precision Ground Strike version, AKVs cannot be used in atmosphere.

- **Kinetic Kill:** Contains a small but powerful engine, guidance computers, and a fragmentation device. It deals 4D6 damage on a successful hit. Cost $60,000.

- **Nuclear:** A low-yield nuclear missile of 250 tons of TNT. Deals 6D6 damage, as well as an automatic radiation crew hit. Cost $180,000.

- **X-Ray Laser:** TThe primary military strike weapon, the X-Ray Laser is a one-shot laser weapon. The AKV contains a small nuclear device that is detonated prior to impact to charge a laser. The explosion destroys the AKV but also generates a powerful x-ray laser burst. The X-Ray Laser is a normal laser attack, but deals 7D6 damage. Point defence can be used to attempt to kill the AKV before it detonates, but suffers a -2 DM due to the fact the X-Ray laser can be used in a stand-off role. Cost $300,000.

- **Precision Ground Strike:** Ground strike AKVs are used for bombing fortified positions. They deal 16D6 damage to ground targets, ignoring 32 points of vehicle or building armour, and have a blast radius of 16m. However, they are much too slow to be effective in space combat. Cost $50,00

Laser Weapons

These are multi-megawatt directed energy weapons, high-energy chemical lasers using hydrogen fluoride, oxygen-iodine or deuterium fluoride. Pulse lasers do more damage than beam lasers, which instead have a better chance of hitting. The beam laser scans the ‘sensor cone’ though its entire range, but must be held precisely on target. The pulsed laser does not scan the entire targeting cone and so is less accurate, but when a pulse hits it transfers more energy into the target doing far more damage).

Particle Beam Weapons

Neutral particle accelerators use electromagnetic fields to accelerate and direct neutral ions along the barrel, and use electrostatic ‘lenses’ to focus these streams. The high energy neutral particles propagate in straight lines unaffected by stellar or planetary magnetic fields and travel close to the speed of light. The neutral particles become high energy charged particles when they pass through the solid hull of a target ship to penetrate deeply into the interior.

Using Cepheus Engine Space Combat Rules

These weapons can be used with the **HOSTILE** Rulebook. For those using the Cepheus Engine Space Combat rules, follow these guidelines:

- Beam and Pulse Lasers act as their CE equivalents.
- SRAMS and AKVs act as CE missiles.
- Railguns attack just like lasers and other energy weapons, but sand/CMLs does not affect them.

TOWING

In the industrial setting of **HOSTILE,** there are large platforms and cargos to be hauled around from star to star. These huge masses will lower the reaction drive capability considerably and also slow down the starship as it passes through hyperspace. In order to tow another vessel (or an unpowered platform) the tug ship must be equipped with a powerful docking clamp able pass the thrust of the towship through the clamp and to the platform or towed vessel. Docking clamps are detailed in the Additional Ship Components section.

Effects on Manoeuvre Drive Performance: Calculate the difference between the towship and the towed-platform, do this by dividing the hull size of the towship by the hull size of the platform. Use this figure to multiply with the towship's acceleration value in 'G'. Refer to the Manoeuvre Drive table in Chapter 9; for any G rating of less than 1.0, multiply that figure by 10. A 0.25G drive, for example, will be capable of a 2.5 Mkm per day velocity.

Here is an example: the Hercules is a 15,000-ton towship with massive 8-G reaction drives. It is towing a 100,000-ton mining platform. 15,000 ÷ 100,000 = 0.15. Its 8G drive (multiplied by 0.15) has become a 1.2-G drive. Following the progression on the Manoeuvre Drive table in Chapter 9, this gives us a 'burn and coast' travel speed of 12 MkM per day.

Effects on Hyperspace Travel: The effects of towing large platforms through hyperspace are more complicated and vary in stages with the hull size increase. Refer to the table below:

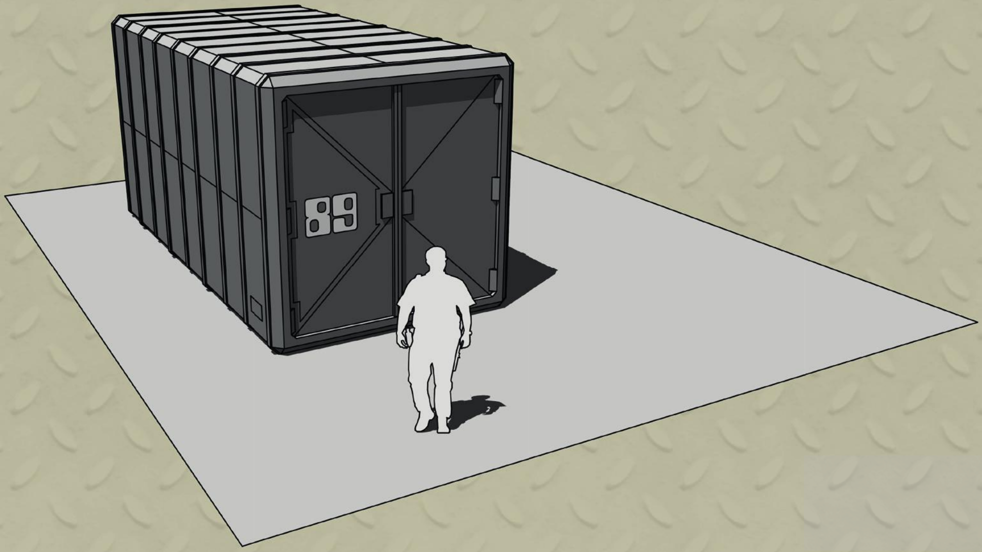
Hull Mass Increase	Increased Hyperspace Travel Time
1 x	no increase
1.1 – 24 x	2
25 -74 x	6
75 – 124 x	8
125 – 224 x	10
225 – 344 x	12
345 – 465 x	16

Here is an example: the 15,000-ton Hercules has a Hyperdrive 4 (4 parsecs per week) and can cross 12 parsecs in 3 weeks when unladen. However, when towing a 100,000-ton mining platform, the Hercules is slowed significantly. When docked to the platform, the Hercules' hull mass has increased by a factor of 6.66 (we divided the hull size of the towed platform by the hull size of the towship – the opposite of what we did when figuring the effects on a manoeuvre drive). Checking the table we see that a hull mass increase of 6.66 will increase the hyperspace travel time by 2 times. That 12 parsec, 3 week, flight has now been extended to a (3 x 2) 6 week trip.

THE INTERMODAL CONTAINER SYSTEM

On Earth since around 1970, the dominant medium for cargo transport has been the ubiquitous 20’ (6m long) intermodal shipping container and its variations. These cuboid containers are shipped across the world on gargantuan ocean-going vessels and used to carry more than 60% of today’s seaborne trade. Modified for use off-world, the intermodal container system (regulated by the Interstellar Commerce Organization) continues to be used to ferry cargoes across interstellar space. The standard-sized ICO container is the ‘ICO CC’ 3 ton box, approximately 6m (20’) long, 2.6m high and 2.6m wide. In starship construction terms, it has a 3 ton internal capacity and is manufactured from a steel-aluminium alloy, for both lightness and qualities of temperature insulation. Most feature twin double doors that open at one end of the container.

Container		Dimensions		
Code	**Capacity**	**L**	**W**	**H**
ICO CC ‘Standard’	3 ton	6m	2.6m	2.6m
ICO 1D ‘Bicon’	1.5 ton	2.6m	3m	2.6m
ICO 1F ‘Tricon’	1 ton	2.6m	2m	2.6m



The US military have used smaller variants of the 20’ box for many years; these Bicon (1.5 ton) and Tricon (1 ton) boxes are one-half and one-third length boxes respectively. Compatibility is ensured since they can be fastened together (two Bicon boxes, side-by-side - or three Tricon boxes side-by-side). Because of this side-by-side fastening system, these two shorter types of boxes have their double doors mounted on one end so that their contents can be accessed even when attached to a partner box. This method of attaching the boxes together allows them to be carried, transported and stacked just like any other 3 ton container. The smaller 1 ton and 1.5 ton boxes have a wide range of uses, they can fit on the backs of off-road vehicles and can be fitted out with equipment racks, trays or storage cabinets – making them large yet portable equipment lockers, popular with military forces, science expeditions and rescue agencies.

SMALL CRAFT DESIGN

Small craft design follows the rules for standard ship design, with the following changes:

Small Craft Ship Hull

Small craft use the Small Craft Ship Hull by Displacement table below. These hulls are standard, they are not streamlined and neither do they include landing gear or an airlock.

Hull	Hull Code	Price ($M)	Hull Pts	Structure Pts
10	S1	1	0	1
20	S2	1.2	0	1
30	S3	1.3	0	1
40	S4	1.4	0	1
50	S5	1.5	1	1
60	S6	1.6	1	1
70	S7	1.7	1	1
80	S8	1.8	1	1
90	S9	1.9	1	1

Small Craft Armour

Small craft armour is purchased in the same manner as standard ship armour. However, small craft have a maximum armour value, based on type. Armour options may be purchased as per the standard ship design rules.

Armour Type	Maximum Armour Value
Titanium Diboride	9
Monocrystalline Steel	12

Small Craft Drives

A small craft must have a reaction drive (also called a manoeuvre, or M-Drive) and a micro-fusion power plant (P-Plant). The costs for each are captured in the Small Craft Drive Costs table. The performance of small craft drives are found in the Small Craft Drive Performance table.

Drive Code	M-Drive Tonnage	Price ($M)	P-Plant Tonnage	Price ($M)
sA	0.25	0.5	1.2	3
sB	0.5	1	1.5	3.5
sC	0.75	1.5	1.8	4
sD	1	2	2.1	4.5
sE	1.25	2.5	2.4	5
sF	1.5	3	2.7	5.5
sG	1.75	3.5	3	6
sH	2	4	3.3	6.5
sJ	2.25	4.5	3.6	7
sK	2.5	5	3.9	7.5
sL	2.75	5.5	4.5	8
sM	3	6	5.1	9
sN	3.25	6.5	5.7	10
sP	3.5	7	6.3	12
sQ	3.75	7.5	6.9	14
sR	4	8	7.5	16
sS	4.5	9	8.1	18
sT	5	10	8.7	20
sU	5.5	11	9.3	22
sV	6	12	9.9	24
sW	6.5	13	10.5	26

Small craft powerplants are micro-fusion reactors, and as a setting detail, we can assume that each powerplant rating is equivalent to 10 Mega Watts of power. A shuttle with a level 2 powerplant then, has a 20 MW rating.

Small Craft Drive Performance Table

Drive Code	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95
sA	2	1	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
sB	4	2	2	1	1	1	1	--	--	--	--	--	--	--	--	--	--	--
sC	6	4	3	2	2	1	1	1	1	1	1	--	--	--	--	--	--	--
sD	--	5	4	3	2	2	2	1	1	1	1	1	1	1	1	--	--	--
sE	--	6	5	4	3	2	2	2	2	1	1	1	1	1	1	1	1	1
sF	--	--	6	4	4	3	3	2	2	2	2	1	1	1	1	1	1	1
sG	--	--	--	5	4	4	3	3	2	2	2	2	2	1	1	1	1	1
sH	--	--	--	6	5	4	4	3	3	2	2	2	2	2	2	1	1	1
sJ	--	--	--	--	6	5	4	4	3	3	3	2	2	2	2	2	2	1
sK	--	--	--	--	6	5	5	4	4	3	3	3	2	2	2	2	2	2
sL	--	--	--	--	--	6	6	5	4	4	4	3	3	3	3	2	2	2
sM	--	--	--	--	--	--	--	6	5	5	4	4	4	3	3	3	3	2
sN	--	--	--	--	--	--	--	--	6	5	5	4	4	4	4	3	3	3
sP	--	--	--	--	--	--	--	--	--	6	6	5	5	4	4	4	4	3
sQ	--	--	--	--	--	--	--	--	--	--	6	6	5	5	5	4	4	4
sR	--	--	--	--	--	--	--	--	--	--	--	6	6	5	5	5	4	4
sS	--	--	--	--	--	--	--	--	--	--	--	--	6	6	6	5	5	5
sT	--	--	--	--	--	--	--	--	--	--	--	--	--	6	6	6	5	5
sU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6	6	5
sV	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6	6
sW	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6

Small Craft Fuel

Manoeuvre Drive: Fuel tankage is equal to 0.1 x Hull x Mn (in tons). This provides 12 Burns at the reaction drive's rating. Once 12 Burns of manoeuvring are completed, the fuel tanks are dry!

Powerplant: The fuel requirements for a small craft's power plant follow the standard ship design rules, with fuel for 12 months operation taking up space equal to the powerplant tonnage. Values are rounded down to the nearest 0.1 of a ton, rather than the nearest ton.

Drive Code	Fuel (12 months)
sA	1.2
sB	1.5
sC	1.8
sD	2.1
sE	2.4
sF	2.7
sG	3
sH	3.3
sJ	3.6
sK	3.9
sL	4.5
sM	5.1
sN	5.7
sP	6.3
sQ	6.9
sR	7.5
sS	8.1
sT	8.7
sU	9.3
sV	9.9
sW	10.5
sX	11.1
sY	11.7
sZ	12.3

Small Craft Cockpit

Small craft do not have bridges. Instead, a tightly-packed cockpit serves the same function. The cost for a cockpit is $0.1M per 20 tons of ship. Cockpits come equipped with a basic communications, sensor and emissions-control electronics suite. More advanced systems and computers up to Model/3 can be installed per the standard ship design rules. Staterooms and hypersleep pods can also be fitted, as can small craft specific cabins (1 ton) and couches (0.5 ton). The cabin is one-passenger stateroom for long in-system voyages, it can be used double occupancy by two crew members instead. The small craft couch is an individual passenger seat and one must be provided for each passenger (unless they have their own cabin).

Small Craft Size	Size (tons)	Crew	Cost ($M)
1-Man Cockpit	1.5	1 crew	0.1 per 20 tons of ship
2-Man Cockpit	3	2 crew	0.1 per 20 tons of ship
Stateroom	4	-	0.5
Hypersleep Pod	0.5	-	0.05
Small Craft Cabin	1	-	0.05
Small Craft Couch	0.5	-	0.025

Computers and Electronics

Use the rules provided earlier for starships, with a limit on a computer up to and including the Model/3.

Airlock

Unlike larger vessels, a small craft does not have an airlock by default. Airlocks take up one ton each and cost $0.2M. If a craft does not have an airlock, then the crew cannot leave the craft except when it is landed or in a pressurized landing bay without opening the ship up to vacuum.

Small Craft Crew

All small craft of 50 tons or under require a minimum crew of one to operate and maintain the ship. Small craft larger than 50 tons require a minimum crew of two.

Small Craft Armaments

A small craft has one hardpoint, despite being less than 100 tons. Small craft follow the standard ship design rules regarding armaments, with some exceptions. Particle beam weapons and lasers cannot be fitted. Missile launchers and CML launchers may be fitted.

CURRENT SHIP DESIGNS

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Class of Vessel	Type	Tonnage	Cost [$M]
EMERGENCY ESCAPE VEHICLES			
Individual Ejection Pod	Escape Pod	0.5 ton	0.05
Neumayer Class	Escape Pod	10 tons	4.70
Orchid Class	Lifeboat	20 tons	5.43
K45 Executive	Lifeboat	50 tons	12.99
SMALL CRAFT			
Nomad Class	Ship’s Boat	30 tons	9.15
Sabre Class	Gunboat	30 tons	12.78
Starlifter Class	Modular Shuttle	50 tons	12.48
Halo Class	Heavy Lift Shuttle	90 tons	17.55
Thunderchief Class	Military Shuttle	90 tons	19.95
Miranda Class	Expedition Lander	90 tons	21.67
COMMERCIAL STARSHIPS			
O’Bannon Class	Light Towship	400 tons	85.16
Vega Class	Executive Transport	800 tons	349.16
Vancouver Class	Mobile Drilling Vessel	6,000 tons	1543
Hercules Class	Heavy Towship	15,000 tons	4,734
Forever West Class	Bulk Cargo Carrier	20,000 tons	5,238
Rosa Class	Container Carrier	20,000 tons	6,140
Electra Class	Petroleum Carrier	40,000 tons	8,427
MILITARY STARSHIPS			
Colorado Class	Patrol Vessel	2,000 tons	725.69
Grissom Class	Vertical Assault Carrier	3,000 tons	1318
Shepard Class	Vertical Assault Carrier	4,000 tons	1918
PLATFORMS/UNPOWERED			
Bay Class	Utility Platform	20,000 tons	2,106
Thurinigia Class	Mining Platform	100,000 tons	58,780
Trinity Class	Refinery Platform	1,000,000 tons	102,882
COLONIAL STARSHIPS			
Pandora Class	Resource Exploration Vessel	2,000 tons	559.20
Great Lakes Class	Colonial Support Vessel	10,000 tons	2,111

All ships utilize Standard hull configurations, unless otherwise stated.

Emergency Escape Vehicles

ESCAPE POD – INDIVIDUAL CREW EJECTION POD 0.5 TON

The Gulfstar ICEP is a Class A Emergency Escape Vehicle (EEV). The streamlined pod masses 0.5 ton and is ejected from a launch tube holding a single suited individual. The ship being abandoned automatically downloads key data to the pod, including potential landing sites, prior to launch. Launch and flight is fully automated, with the pod attempting an immediate atmospheric entry and landing using parachute and retro rockets. It can also attempt soft landings on airless moons and planets. The ICEP contains no survival or medical kit, although it does hold enough water and air for three days. The ICEP includes a beacon that will transmit an SOS signal for four days, it also activates a high-intensity strobe light visible in daylight up to 5 km away. Use of the Gulfstar ICEP is limited, if there is no nearby world, the pod will simply continue through space on its current trajectory; the starship in trouble has to be in orbit around a habitable planet for the occupant to stand any chance of survival. Even then, 1 in 6 launches and landings end in tragedy. The ICEP is seen as an escape method of *extreme* last resort. Cost $0.05M.

ESCAPE POD – NEUMAYER CLASS 10 TONS

The Aerodyne Neumayer is an 8-man Class B Emergency Escape Vehicle (EEV). Using a 10-ton, squat cylindrical and streamlined hull (Hull 0, Structure 0) the escape pod is used only for emergency evacuation situations, either taking eight awake and conscious crewman down to a nearby planetary surface, or, if the ship has just dropped out of hyperspace and the crew is still in hypersleep, the pod can instead accept eight hypersleep pods, loaded one at a time. It mounts a Terratech TR105 10 Megawatt Micro-Fusion Reactor and a single McConnell C-90 1-G reaction drive. The reaction drive provides an acceleration of 10 metre per second^2. Fuel tankage comprising 2.2 tons of liquid hydrogen is used by the reaction drive and can provide coolant to the micro-fusion reactor for 12 months of continuous operation.

An automated flight system is supplemented by a manual override cockpit for a single pilot. It includes a level-1 Okuda Brightstar computer system and a standard civilian sensor package. There are eight passenger acceleration couches, which can fold back into the hull to make way for eight hypersleep pods instead. The method of loading is ingenious; Neumayers are always installed beneath hypersleep bays and rotate like the cylinder of a revolver as one after another of the ship's hypersleep pods is lowered into place. Once loaded the automatics launch the pod and use nav-data downloaded from the starship to navigate to a relative place of safety, typically the surface of a moon or planet. There is no airlock fitted, and no landing gear - the pod makes a parachute descent with retro-rockets firing prior to touchdown. It should remain upright, and will then automatically inflate an attached pressure tent with its own integral airlock. This tent provides additional living space. There are eight personal survival kits on-board as well as a single vacc suit for excursions from the airlock should the atmosphere prove dangerous or non-existent. A water tank containing 250 litres of water is also included. The large parachute is retained and once the computer switches to crisis management mode it will provide instructions on how to spread the 'chute' out over the top of the pod and be secured with steel pegs. This is in order to provide a large canopy over the vehicle and the immediate area around it, serving as rain shelter, sunshade and partial anti-radiation shield.

The Neumayer powerplant can sustain electrical and heating power for up to one year. Properly set-up, the Neumayer can become a comfortable survival base for 8 people for up to a year in many kinds of environments.

All the while, the crisis management software will continue to scan for radio messages and transmit an emergency signal that rescuers might be able to receive. There is no spare cargo space on board the escape pod. The ship does not require a pilot for successful operation, although there is a control couch for a pilot should manual control be desired. The Neumayer can carry up to eight passengers. It costs $4.70M.

LIFEBOAT – ORCHID CLASS
20 TONS

The Aerodyne Orchid is a Class C Emergency Escape Vehicle (EEV) lifeboat and light shuttle often carried on-board, or attached to, a much larger starship as an ancillary craft. Using a 20-ton streamlined hull (Hull 0, Structure 1) the lifeboat is used as an emergency vessel, or as a shuttle between a planet's orbit and its surface. It mounts a Northinghouse N-045 10 Megawatt Micro-Fusion Reactor and two McConnell C-102 1-G reaction drives (capable of vectored thrust for planetary landings). The reaction drives provide an acceleration of 10 metre per second². Fuel tankage comprising 2.4 tons of liquid hydrogen is used by the reaction drives and can provide coolant to the micro-fusion reactor for 12 months of continuous operation. A cockpit for two pilots is complemented by a level-1 Okuda Brightstar computer system. The ship is equipped with a standard civilian sensor package. There is no airlock fitted, but landing gear is installed for planetary landings. There are five passenger acceleration couches, as well as three hypersleep pods for emergency use. Cargo capacity is 9.15 tons.

The ship requires a single pilot for successful operation, although there is second control couch for a co-pilot (or passenger) if desired. Besides the two pilots, the Lifeboat can routinely carry five passengers. The Orchid Lifeboat costs $5.43M.

EXECUTIVE LIFEBOAT – K45 CLASS
50 TONS

The Voroncovo K45 is a Class D Emergency Escape Vehicle (EEV) and lifeboat often carried on-board executive transports. The craft sports a luxury interior that is used by the occupants as their in-flight accommodation - should disaster strike, then their entire compartment separates from the starship to become a free-flying lifeboat. Using a 50-ton streamlined hull (Hull 1, Structure 1) the lifeboat is used purely as an emergency evacuation vessel. It mounts a Leyland 67334 10 Megawatt Micro-Fusion Reactor and a single Gulfstar Gigant 1-G reaction drive (capable of vectored thrust for planetary landings). The reaction drive provides an acceleration of 10 metre per second². Fuel tankage comprising 8.6 tons of liquid hydrogen is used by the reaction drive and can provide coolant to the micro-fusion reactor for 24 months of continuous operation. An automated flight system is supplemented by a manual override control cabin for a two-man crew. This control station is complemented by a level-1 Hitachi-Novum 104 computer system and a standard civilian sensor package. There is an airlock fitted as well as landing gear for planetary landings. There are four passenger acceleration couches, as well as four hypersleep pods for emergency use. Accommodation is provided in the form of two luxurious 10-ton suites, each fitted out for two-person use. An autodoc is also included as part of the K45.
A water tank containing 5,000 litres of fresh water is included (along with a water recycling system), as are 4 personal survival kits and an attached pressure tent that self-inflates to provide additional living space if required. Supplies, including tools, food, clothing and other survival equipment is packed into a 5.05 ton cargo area.
The ship does not require a pilot for successful operation, although there is a control cabin for two pilots should manual control be desired. The K45 can carry up to four passengers in extreme comfort. It costs $12.99M.

Small Craft

SHIP'S BOAT - NOMAD CLASS
30 TONS

The McConnell Nomad is a general purpose light shuttle and ancillary craft, used for orbital transfers, landings and ship-to-ship transport. A military variant, the AS-3 Sabre, is in use with both the US Marine Corps and the US Space Corps. Using a 30-ton streamlined hull (Hull 0, Structure 1) the Nomad mounts a Northinghouse N-442 30 Megawatt Micro-Fusion Reactor and a McConnell C-667 3-G reaction drive (capable of vectored thrust for planetary landings). The reaction drive provides an acceleration of 30 metre per second². Fuel tankage comprising 9.8 tons of liquid hydrogen is used by the reaction drives and can provide coolant to the micro-fusion reactor for 4 months of continuous operation. A cockpit for two pilots is complemented by a level-1 Okuda Brightstar computer system. The ship is equipped with a standard civilian sensor package. There is an airlock fitted behind the cockpit, and landing gear is installed for planetary landings. There are eight passenger acceleration couches and a 9.5 ton cargo deck.

The ship only requires a single pilot for successful operation but is equipped with a co-pilot's station. Besides the two pilots, the ship's boat can routinely carry eight passengers. The McConnell Nomad costs $9.15M.

GUNBOAT – SABRE CLASS
30 TONS

The McConnell AS-3 Sabre is a general purpose armed shuttle and gunboat, used as an ancillary craft by United States forces. Using a 30-ton streamlined hull (Hull 0, Structure 1) the Sabre mounts a Northinghouse N-442 30 Megawatt Micro-Fusion Reactor and a McConnell C-667 3-G reaction drive (capable of vectored thrust for planetary landings). The reaction drive provides an acceleration of 30 metre per second². Fuel tankage comprising 9.8 tons of liquid hydrogen is used by the reaction drives and can provide coolant to the micro-fusion reactor for 4 months of continuous operation. A cockpit for two pilots is complemented by a level-3 IBN LORC computer system. The ship is equipped with a basic military sensor package. There is an airlock fitted behind the cockpit, and landing gear is installed for planetary landings. There are eight passenger acceleration couches and a 5.5 ton cargo deck. Weapon systems consist of two fixed position SRAM launchers, fed by a missile magazine supplying 6 missiles to each launcher.

The AS-3 gunboat only requires a crew of two: pilot and weapons operator. Besides the two pilots, the craft can carry eight military crewmen or US Marines. The McConnell Sabre costs $12.78M.

MODULAR SHUTTLE - STARLIFTER CLASS
50 TONS

The Lockhart Starlifter is a general purpose medium-lift shuttle with a unique ability to attach and detach various 20-ton modules. This allows a single shuttle to carry out a variety of missions depending on the module that it is carrying at the time. Using a 50-ton streamlined hull (Hull 1, Structure 1) the Starlifter mounts a Northinghouse N-442 30 Megawatt Micro-Fusion Reactor and a McConnell C-667 3-G reaction drive (capable of vectored thrust for planetary landings). The reaction drive provides an acceleration of 30 metre per second². Fuel tankage comprising 16 ton of liquid hydrogen is used by the reaction drives and can provide coolant to the micro-fusion reactor for 3 months of continuous operation. A cockpit for two pilots is complemented by a level-1 Okuda Brightstar computer system. The ship is equipped with a standard civilian sensor package. There is no airlock fitted, although sturdy shock absorbing landing gear is installed for planetary landings. There are four passenger acceleration couches and a 1-ton docking clamp designed to accept a 20-ton Starlifter module. A small cargo area holds 4.8 tons.

The ship only requires a single pilot for successful operation but is equipped with a co-pilot's station. Besides the two pilots, the ship's boat can routinely carry four passengers. The Lockhart Starlifter costs $12.48M (without module). An empty, unfurnished module costs $1.2M. Popular Starlifter modules include:

Module Freight 001 *- Used as a dedicated cargo hauler, the 001 has a strengthened, impact-resistant cargo deck fitted with cargo rollers and a roof-mounted winch. Cost: $1.3M.*

Module Science 002 *– Used for planetary science and research missions, the 002 includes an airlock, two laboratories, an office, an autodoc, six passenger couches, a set of UAV drones, a GoMo QuadTrack and a 3-ton cargo compartment. Cost: $4.11M.*

Module Workhorse 004 *– Used for general purpose transfer work between orbit and world surface, the 004 'Workhorse' is fitted with 12 passenger couches and a 12.8-ton cargo deck. Cost: $1.5M.*

Module Combat 007 *– Used by some military forces as a combat lander, the 007 carries a single 5-ton APC or other similarly-sized combat vehicle, 28 troop couches, a level-3 IBN RT5617 computer and a double turret fitted with a single SRAM launcher and a Countermeasures Launcher. Cost: $55M.*

HEAVY LIFT SHUTTLE – HALO CLASS 90 TONS

The Matsuyama Halo is a heavy-lift shuttle used by to transfer personnel and equipment from world surface to orbit and vice-versa. A military variant, the CS-9 Thunderchief, is in use with both the US Marine Corps and US Space Command. Using a self-sealing 90-ton streamlined hull (Hull 1/1) it mounts a Nortinghouse N-240 20 Megawatt Micro-Fusion Reactor and a McConnell C-500 3-G reaction drive (capable of vectored thrust for planetary landings). The reaction drive provides an acceleration of 30 metre per second². Fuel tankage comprising 30.6 tons of liquid hydrogen is used by the reaction drive and provides coolant to the micro-fusion reactor for 12 months of continuous operation. Integral to the 2-seat control deck bridge is a level-1 Okuda Brightstar computer system. The lander is equipped with a standard civilian sensor package. An airlock and landing gear are both fitted. The Halo comes in three main configurations: Cargo Plus, Pax Plus and Combi. The Cargo Plus option has two passenger couches, an on-board Voroncovo Forklift 4 and a cargo deck of 47.15 tons. The Pax Plus option has acceleration couches for 78 passengers and two extra for cabin crew. It retains a 3.15 ton cargo space for luggage and incidentals. The Combi is a common ship-to-surface lander, with a 42.15 ton cargo deck, a forklift and seating for ten passengers.

The ship normally requires a crew of two: pilot and co-pilot, although the Pax Plus option also requires the addition of two cabin attendants. The Halo Cargo Plus costs $17.55M; the Halo Pax Plus costs $19.75M and the Halo Combi costs $17.75M.

MILITARY SHUTTLE – THUNDERCHIEF CLASS 90 TONS

The Matsuyama CS-9 Thunderchief is a heavy-lift shuttle used by to transfer US Marines and their equipment from world surface to orbit and vice-versa. It is a military variant of the Matsuyama Halo. Using a self-sealing 90-ton streamlined hull (Hull 1/1) it mounts a Nortinghouse N-240 20 Megawatt Micro-Fusion Reactor and a McConnell C-500 3-G reaction drive (capable of vectored thrust for planetary landings). The reaction drive provides an acceleration of 30 metre per second². Fuel tankage comprising 30.6 tons of liquid hydrogen is used by the reaction drive and provides coolant to the micro-fusion reactor for 12 months of continuous operation. Integral to the 2-seat control deck bridge is a level-1 Okuda Brightstar computer system. The lander is equipped with a standard civilian sensor package. A triple turret mounting is fitted with a Countermeasures Launcher and two SRAM launchers. An airlock and landing gear are both fitted. The CS-9 Thunderchief has 28 passenger couches, an on-board Voroncovo Forklift 4 and a cargo deck of 33.15 tons.

The ship normally requires a crew of two: pilot and co-pilot/weapons operator and costs $19.95M.

EXPEDITION LANDER – MIRANDA CLASS
90 TONS

The Voroncovo Miranda is a class of heavy expedition shuttle used by scientists, explorers and resource scouts. It can support a planetary surface mission and then return the team to its starship, in orbit. Using a self-sealing 90-ton streamlined hull (Hull1/1) it mounts a Leyland 20 MW Micro-Fusion Reactor and a McConnell C-230 2-G reaction drive (capable of vectored thrust for planetary landings). The reaction drive provides an acceleration of 20 metre per second². Fuel tankage comprising 21.9 tons of liquid hydrogen is used by the reaction drive and provides coolant to the micro-fusion reactor for 12 months of continuous operation. Integral to the 2-seat control deck is a level-1 Okuda Brightstar computer system. The lander is equipped with a standard civilian sensor package. There are 10 acceleration couches for the survey team and an integral airlock. Cargo capacity is 19.3 tons. Special features include side-mounted loading ramps, landing gear, a medbay and lab, as well as compact sleeping and living quarters for the entire team. Two GoMo QuadTracks used for local surface travel are installed at the back of the cargo bay.

The ship requires a crew of two: pilot and co-pilot. It carries 10 passengers. The Miranda class shuttle costs $21.67M.

Commercial Starships

LIGHT TOWSHIP – USCS O'BANNON
180454 400 TONS

The Gulfstar O'Bannon is a light towing vessel used to haul ships or platforms of any size up to 5,000 tons. It is often employed as a trans-orbital or interplanetary tug. The O'Bannon's four engine pods are mounted on port and starboard arms and these are able to swivel, giving the tug ship excellent agility within an atmosphere and particularly when close to the ground. This class of vessel has many uses among the Off-World Colonies. In an atmosphere, with its superb VTOL performance and its over-rated, high-thrust engines, it can be used as a flying crane, able to carry underslung cargoes up to 400 tons in size. Using a 400-ton streamlined and self-sealing standard hull (Hull 8, Structure 8) the O'Bannon mounts a Tharsis 12B Hyperdrive allowing a cruise speed of 2 parsecs per week; a Nortinghouse NC-2000 3 Gigawatt Fusion Reactor and a Gulfstar Super-Macro LGX 6-G reaction drive (capable of vectored thrust for planetary landings). The reaction drives provide an acceleration of 60 metre per second². Fuel tankage comprising 250 tons of liquid hydrogen is used by the reaction drive and can provide coolant to the fusion reactor for 12 months of continuous operation. The bridge is suspended beneath the centrally-mounted forward retro-rocket; it provides great visibility for towing and cargo slinging operations. Adjacent to the bridge is a level-2 Aztec Labs FTHR computer mainframe and a basic civilian sensor package. There are eight hypersleep pods for crew use in-transit and eight staterooms provided for orbital lay-overs. A cargo deck of 32 tons carries supplies and technical spares, it is loaded via a rear-mounted ramp. The O'Bannon is equipped with landing gear for planetary landings. The ship carries a medbay and is fitted with a 20-ton docking clamp for the towing of loads up to 5,000 tons as well as a powered belly winch for carrying an underslung load up to 400 tons.

The ship requires a crew of six: commanding officer, pilot, navigator, medic, chief engineer and an assistant engineer. Two spare hypersleep pods and staterooms are included to allow for two non-fee-paying passengers to be carried. The USCS O'Bannon costs $85.16M.

EXECUTIVE TRANSPORT – USCS VEGA 116094 800 TONS

The Leyland-Okuda Vega is a luxurious executive ship designed to transport a corporate VIP and their family or guests across interstellar distances. Using a 800-ton self-sealing, lifting body hull (Hull 16, Structure 16) the Vega mounts a Tharsis Power 133 Hyperdrive allowing a high cruise speed of 5 parsecs per week; a Leyland 5 Gigawatt Fusion Reactor and a Tharsis Vector 341 3-G reaction drive (capable of vectored thrust for planetary landings). The reaction drive provides an acceleration of 30 metre per second². Fuel tankage comprising 252 tons of liquid hydrogen is used by the reaction drive and can provide coolant to the fusion reactor for 12 months of continuous operation. Adjacent to the bridge is a level-5 Hosaka Goldstar 400 computer mainframe and a basic civilian sensor package. The heart of this executive yacht is a Voroncovo K45 50-ton lifeboat which incorporates two luxurious 10-ton suites, each large enough for two people. The lifeboat also features an autodoc and four hypersleep pods. In an emergency the lifeboat can separate from the Vega to be flown on automatic to a safe location. While attached to the Vega it forms a seamless part of the starship. Outside of the K45 lifeboat, there are 23 hypersleep pods for crew and passengers and 23 staterooms provided for orbital lay-overs. There is a large 20-ton lounge on-board as well as a 50-ton 'ballroom', a medbay and an 8-ton conference room. Hypersleep pods and top-quality staterooms are also provided for 11 more passengers. The ship is fitted with landing gear, a General Exoframes Workloader, a set of repair robots, three 10-ton Neumayer escape pods for the crew and passengers, and a 40-ton Nimbus spaceplane. The cargo deck holds 121.9 tons.

The ship requires a crew of eight: commanding officer, pilot, navigator, medic, engineer, purser and two stewards. The Vega costs $349.16M.

MOBILE DRILLING VESSEL – USCS VANCOUVER 080102 6,000 TONS

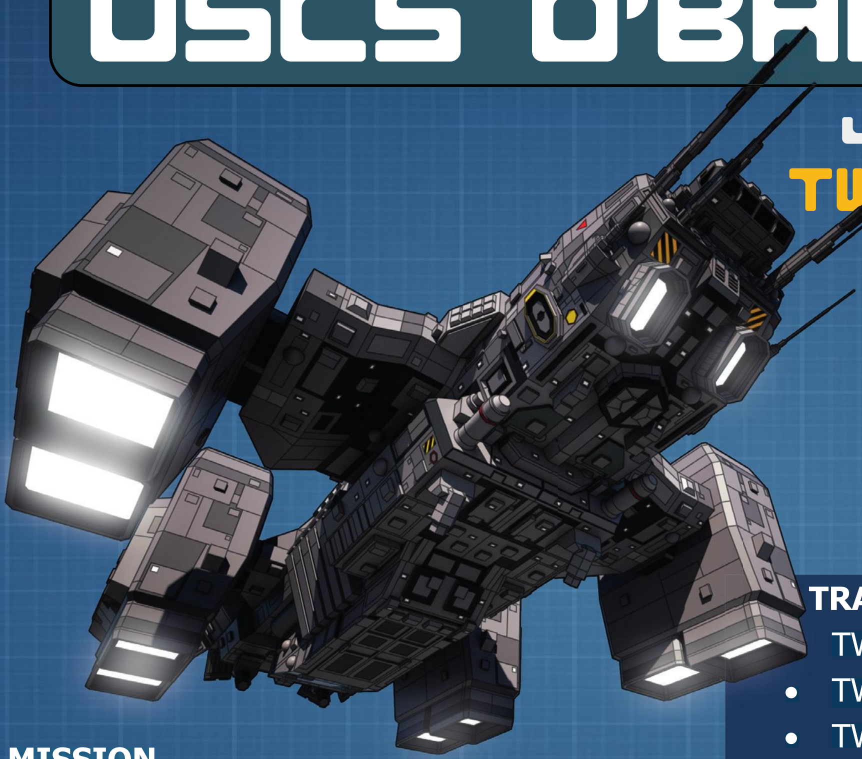
The McConnell Vancouver is a mobile drilling vessel designed to travel out to asteroids or small moons to carry out small scale, short-duration mining activities, often as part of an ongoing prospecting or survey mission. Using a 6,000-ton standard hull (Hull 70, Structure 70) the Vancouver mounts a Tharsis 12B Hyperdrive allowing a cruise speed of 2 parsecs per week; a Terratech TX200 2 Gigawatt Fusion Reactor and a Gulfstar Meridian SST 1-G reaction drive. The reaction drive provides an acceleration of 10 metre per second². Fuel tankage comprising 720 tons of liquid hydrogen is used by the reaction drive and can provide coolant to the fusion reactor for 12 months of continuous operation. Adjacent to the bridge is a level-3 Aztec Labs HUGH computer mainframe and a standard civilian sensor package with an additional suite of survey sensors. There are 76 hypersleep pods for crew use in-transit as well as 36 staterooms provided for orbital lay-overs. Mining personnel are allocated a place in the 40 Stack-Racks™. Features of the Vancouver include two briefing rooms and 4 offices, 3 boom conveyors, 2 manipulator arms, a lab, a small infirmary, 2 large cargo lifts, a 400-ton ore smelter, 130 tons of ore handling machinery and an 8-ton technical workshop. Two mining lasers, each mounted in its own turret, are fitted to the upper hull; two more are mounted at the base of the hull to fire vertically downwards. The Vancouver has sturdy landing gear incorporating augur drills that secure the rig to the asteroid, as well as fuel processors able to create 36 tons of fuel each day. Carried craft include two McConnell Nomad ship's boats within a hanger, as well as an ATV, 6 GoMo QuadTracks, 4 Exoframes Workloaders, a Dynamic 7100 mobile mining laser, 3 EH1800 dump trucks and 4 Chevrolet MM5 Bucket Loaders. Assisting with mining operations are 4 mining drone units. A mining operations centre (MOC) is fitted to allow ship and mine to be run independently. A cargo deck of 300 tons carries supplies and technical spares and an ore bay is capable of holding up to 3000 tons of ore. On landing, the rig stands upright and three ore conveyor arms lower to the surface. Miners load ore onto these conveyors for transport into the smelter, and refiner with tailings (waste) being conveyed out the other side. Smelted metals can be retained in the ore bay or conveyed to a dump pile or hopper waiting on the surface for pick-up by a bulk cargo carrier once the mining operation has finished.

The ship requires a crew of 72: commanding officer, exec, three admin staff, pilot, navigator, four stewards/catering staff, doctor, two nurses, two shuttle pilots, four loadmasters, two engineers, two geologists, mining operations manager and an assistant manager (all of whom have a stateroom) and 40 miners (including drivers and equipment operators) who occupy the Stack-Racks™. The Vancouver costs $1543M.

USCS O'BANNON

400 TONS

TWV-180454



TRANSTAR FLEET

TWV-180454	O'BANNON
TWV-180461	AFRICAN QUEEN
TWV-180462	O'NEIL
TWV-180475	GARY COOPER
TWV-180482	DRAGON LADY
TWV-180485	NOMAD
TWV-180490	HYAMS
TWV-180499	NICOMEDIA
TWV-180505	JOHN WAYNE
TWV-180520	HAMPTON
TWV-180523	TRUMBLE

MISSION

Light towing vessel used to haul ships or platforms of any size up to 5,000 tons. It is often employed as a trans-orbital or interplanetary tug.

The O'Bannon's engine pods are mounted on port and starboard arms, able to swivel to give the tug ship excellent agility within an atmosphere and particularly when close to the ground.

TOWSHIP – USCS HERCULES 180286 15,000 TONS

The Tharsis Hercules is a commercial towing vessel built by Tharsis Aerospace. Using a 15,000-ton standard hull (Hull 100, Structure 100) the Hercules is used to tow large industrial platforms to and from their work-site. It mounts an Aerodyne GRR Hyperdrive allowing an unladen high cruise speed of 4 parsecs per week; a Nortinghouse N-2306 4 Gigawatt Fusion Reactor and two Tharsis Type 22 8-G reaction drives (capable of vectored thrust for planetary landings). The reaction drives provide an unladen acceleration of 80 metre per second². Fuel tankage comprising 12,450 tons of liquid hydrogen is used by the reaction drives and can provide coolant to the fusion reactor for 12 months of continuous operation. Adjacent to the bridge is a level-5 Hosaka Goldstar 400 computer mainframe. The ship is equipped with a basic civilian sensor package. There are seven hypersleep pods for crew use in-transit and seven staterooms provided for orbital lay-overs. Cargo capacity is 216.5 tons. Special features include a dorsally-mounted docking clamp that allows the Hercules to pull platforms massing as much as 4 million tons and a 4-ton medbay. A 20 ton Aerodyne Lifeboat is carried on an external ventral mounting and a 2 ton Advanced Motors utility jeep is carried inside a bay adjacent to the cargo hold.

The ship requires a crew of seven: commanding officer, pilot, navigator, medic, sensor operator, chief engineer and assistant engineer. The ship cannot carry any additional passengers. The Hercules costs $4,734M.

Vectoring past the system's brown dwarf, Con Am's Land of Lincoln begins an approach to Prosperity, in the Japanese Sector

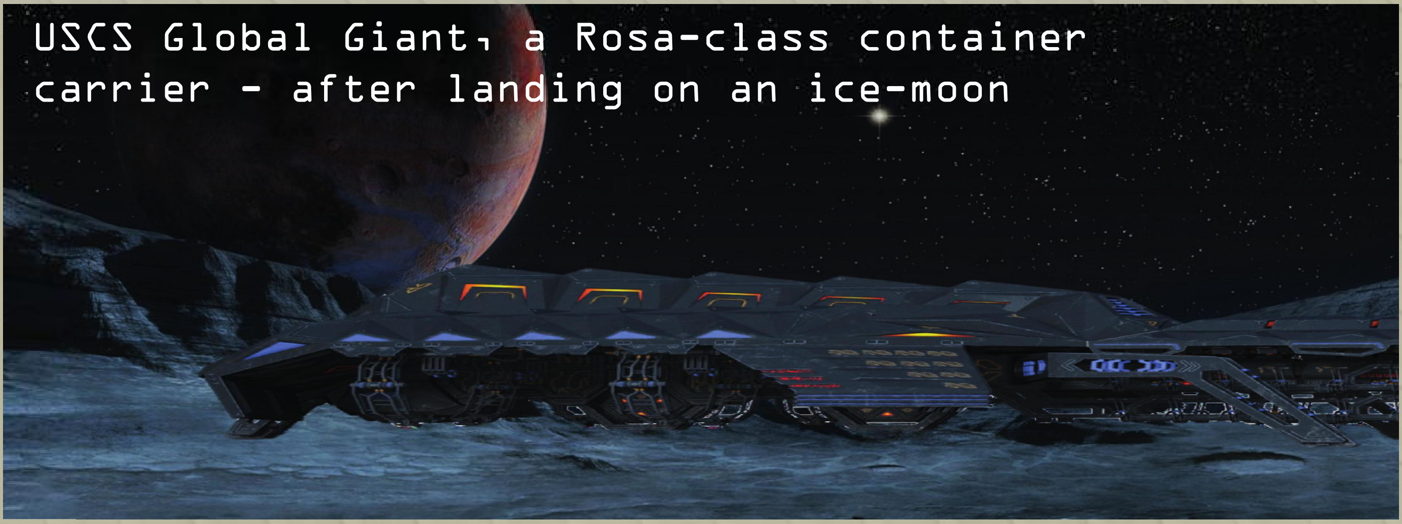
BULK CARGO CARRIER – USCS FOREVER WEST 150158 20,000 TONS

The Wu-Ketai Forever West is a large bulk carrier designed to transport dry cargoes such as mineral ore, coal or wheat across interstellar distances. Using a 20,000-ton standard hull (Hull 200, Structure 200) the Forever West mounts a Tharsis Power 90 Hyperdrive allowing a speed of 3 parsecs per week; a Nortinghouse N-2140 3 Gigawatt Fusion Reactor and a Gulfstar Meridian VXC 3-G reaction drive (capable of vectored thrust for planetary landings). The reaction drives provide an acceleration of 30 metre per second². Fuel tankage comprising 6,500 tons of liquid hydrogen is used by the reaction drive and can provide coolant to the fusion reactor for 12 months of continuous operation. Adjacent to the bridge is a level-6 IBN MTHR computer mainframe and a standard civilian sensor package. There are ten hypersleep pods for crew use in-transit and ten staterooms provided for orbital lay-overs. A cargo deck of 49.25 tons carries supplies and technical spares. There are three bulk cargo holds, each with a capacity of 3,660 tons and each with its own 150-ton discharge boom conveyor. Internal features include a fuel scoops and processors that can create up to 1,000 tons of liquid hydrogen each day, a small cargo lift, landing gear and a medbay. A 20 ton Aerodyne Lifeboat is carried on an external ventral mounting and a 0.75 ton Voroncovo Forklift 4 Series is carried on the cargo deck.

The ship requires a crew of eight: commanding officer, pilot, navigator, medic, sensor operator, chief engineer and two assistant engineers. The ship has the capability to carry two non fee-paying passengers (typically officials from the Company) The Forever West costs $5,238M.

CONTAINER CARRIER – ECS ROSA NØRSK 172341 20,000 TONS

The Voroncovo Rosa Nørsk is a container carrier designed to transport up to 5,066 standard ICO containers out to the Off-World Colonies. Using a 20,000-ton standard, self-sealing hull (Hull 200, Structure 200) the Rosa Nørsk mounts an Aerodyne GRR Hyperdrive allowing a cruise speed of 4 parsecs per week; a Matsuyama OMZ 4 Gigawatt Fusion Reactor and a Gulfstar Meridian SST 1-G reaction drive. The reaction drive provides an acceleration of 10 metre per second². Fuel tankage comprising 2,600 tons of liquid hydrogen is used by the reaction drive and can provide coolant to the fusion reactor for 12 months of continuous operation. Adjacent to the bridge is a level-6 IBN MTHR computer mainframe and a standard civilian sensor package. There are eight hypersleep pods for crew use in-transit and eight staterooms provided for orbital lay-overs. Two cargo decks of 7600 tons each,



USCS Global Giant, a Rosa-class container carrier - after landing on an ice-moon are equipped to carry ICO containers, whilst a 14-ton cargo supply bay provides technical spares and supplies for the crew and the ship itself. Landing gear is fitted as is a medbay. A 30 ton McConnell Nomad ship's boat is carried on an external cradle and two 3-ton Matsuyama Reachstacker RS1000s are carried on the cargo deck for shifting containerized cargo if required. For emergency use, a single 8-man Aerodyne Neumayer is included to carry the crew to safety during an evacuation.

The ship requires a crew of eight: commanding officer, pilot, navigator, medic, sensor operator, chief engineer, assistant engineer and a loadmaster. The Electra costs $6,140M.

PETROLEUM CARRIER – ECS ELECTRA GIANT 112078 40,000 TONS

The Rockford Aerospace Electra Giant is a petroleum tanker designed to transport petroleum products such as crude oil, kerosene and ethanol from outposts and colony planets to Earth. Using a 40,000-ton standard hull (Hull 250, Structure 250) the Electra Giant mounts a Matsuyama H78 Hyperdrive allowing a high cruise speed of 1 parsec per week; a Matsuyama OKL-1 1 Gigawatt Fusion Reactor and a Gulfstar Meridian SST 1-G reaction drive. The reaction drive provides an acceleration of 10 metre per second². Fuel tankage comprising 4,600 tons of liquid hydrogen is used by the reaction drive and can provide coolant to the fusion reactor for 12 months of continuous operation. Adjacent to the bridge is a level-7 M21 Hosaka computer mainframe and a standard civilian sensor package. There are ten hypersleep pods for crew use in-transit and ten staterooms provided for orbital lay-overs. A cargo deck of 600 tons carries supplies and technical spares. There are four petroleum tanks, each capable of being filled with a different substance and each with a capacity of 7,900 tons. Each tank feeds to a central liquid transfer manifold for piping on and off at port. A medbay is fitted. A 30 ton McConnell Nomad ship's boat is carried on an external cradle and a 3 ton Matsuyama Reachstacker RS1000 is carried on the cargo deck for shifting containerized cargo. The Electra Giant has a standard hull and landing gear, giving it the ability to land on a planetary surface.

The ship requires a crew of nine: commanding officer, pilot, navigator, medic, sensor operator, chief engineer, assistant engineer and a loadmaster. The ship has the capability to carry one non fee-paying passenger (typically an official from the Company) The Electra Giant costs $8,427M.

Military Starships

PATROL VESSEL – USS COLORADO P12 2,000 TONS

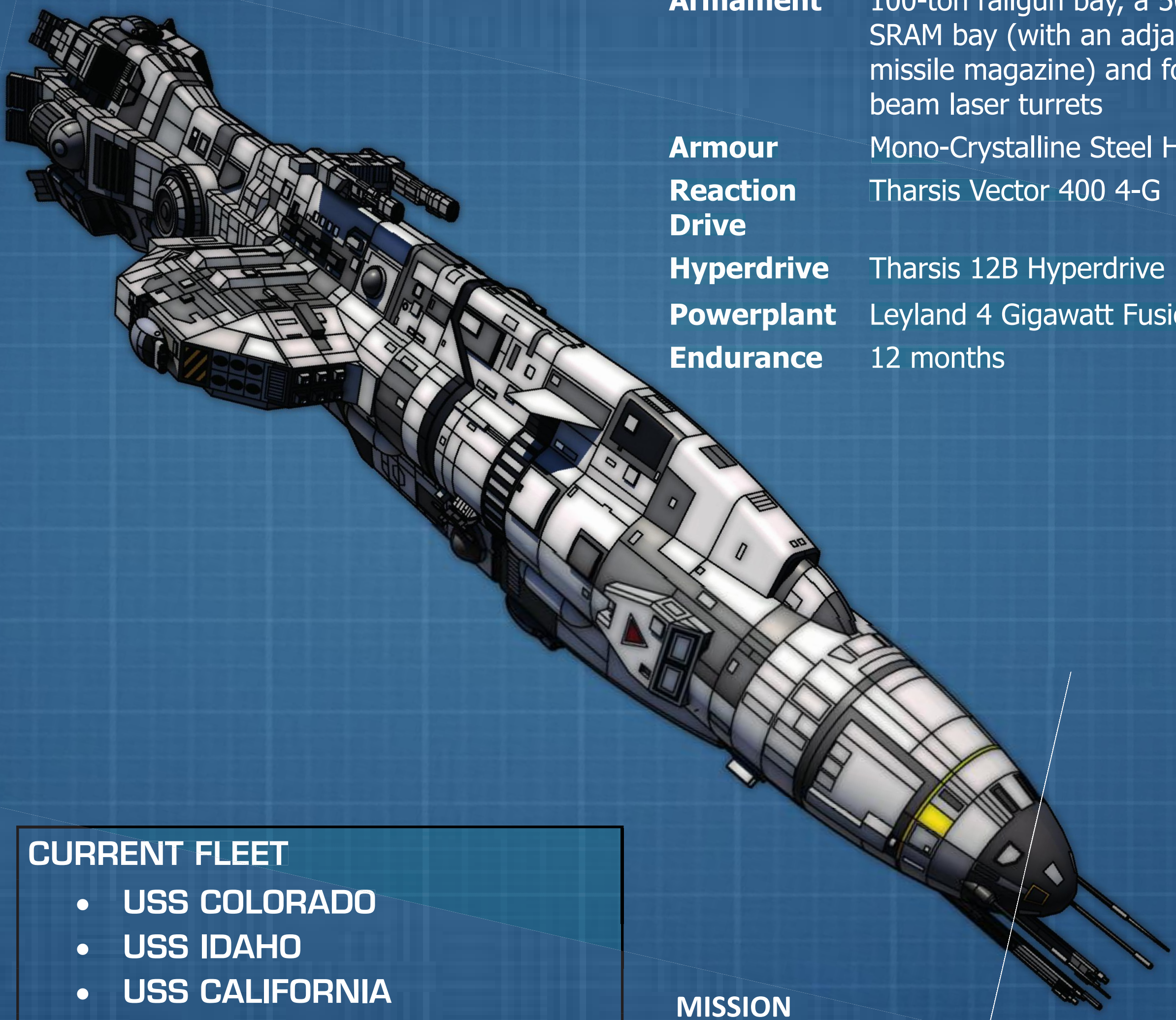
The USS Colorado [Hull Number P12] is a United States Space Command patrol vessel that can carry out multi-system patrols during a single cruise. It also serves as a security, customs and rescue ship, retaining two squads of US Marines for boarding operations. Using a streamlined 2000-ton self-sealing hull (Hull 30/Structure 30), enhanced with mono-crystalline steel (Armour 4), the Tharsis Aerospace Colorado mounts a Tharsis 12B Hyperdrive allowing a cruise speed of 2 parsecs per week; a Leyland 4 Gigawatt Fusion Reactor and a Tharsis Vector 400 4-G reaction drive (capable of vectored thrust for planetary landings). The reaction drives provide an acceleration of 40 metre per second². Fuel tankage comprising 1,160 tons of liquid hydrogen is used to provide coolant to the fusion reactor for 12 months of continuous operation and by the reaction drive for extended operations, with 138 thrust-hours available rather than the standard 100.

Adjacent to the bridge is a hardened level-4 Hosaka M7K computer mainframe and a basic military sensor array. There are seventy hypersleep pods for crew and passenger use in-transit. Three single staterooms and 34 double staterooms serve as accommodation during in-system operations. The patrol vessel

USS COLORADO

2000 TONS

Completed	10/13/2210
First Flight	7/4/2211
Crew	54
Armament	100-ton railgun bay, a 50-ton SRAM bay (with an adjacent 72 missile magazine) and four triple beam laser turrets
Armour	Mono-Crystalline Steel Hull
Reaction Drive	Tharsis Vector 400 4-G
Hyperdrive	Tharsis 12B Hyperdrive
Powerplant	Leyland 4 Gigawatt Fusion Reactor
Endurance	12 months



CURRENT FLEET

- USS COLORADO
- USS IDAHO
- USS CALIFORNIA
- USS MILWAUKEE
- USS WYOMING
- USS RHODE ISLAND
- USS FLORIDA
- USS ALABAMA
- USS WASHINGTON
- USS NORTH CAROLINA

MISSION

The Colorado class is a United States Space Command patrol vessel that can carry out multi-system patrols during a single cruise.

It also serves as a security, customs and rescue ship, retaining two squads of US Marines for boarding operations.

is equipped with an armoury, briefing room and office, a pair of detention cells, a medbay, a 20-ton staging area and a suite of fuel processors able to refine up to 800 tons of liquid hydrogen per day. Landing gear is also fitted. The Colorado is a fighting ship and so has a 100-ton railgun bay, a 50-ton SRAM bay (with an adjacent 72 missile magazine) and four triple beam laser turrets. There are a set of probe drones and repair robots installed, as well as an Exoframes Workloader for shifting ammunition and stores on the cargo deck and hanger. A 78-ton hanger bay holds two 30-ton ship's boats, both McConnell US-3 Sabres (a militarized version of the McConnell Nomad). A cargo deck of 72.5 tons carries supplies and technical spares.

The Colorado requires a crew of fifty-four: commanding officer, exec, science officer, android technician, two admin personnel, two pilots, two navigators, two sensor operators, chief engineer, two assistant engineers, a steward, two medics, two shuttle pilots, two Armourers, tactical officer and five weapons operators. A Marine lieutenant commands two Marine squads, each of 13 men. There are hyperspace pods and double-occupancy staterooms for up to 16 emergency passengers. The Colorado costs $725.69M.

VERTICAL ASSAULT CARRIER – USS VIRGIL GRISSOM V6 3,000 TONS

The USS Virgil Grissom [Hull Number V6] is a United States Space Command vertical assault and landing carrier, designed to ferry a reinforced rifle company across hyperspace ready for deployment. The reinforced rifle company is commanded by a captain and his 'first sergeant' (a position held by a Marine of master sergeant rank). Together they run the reinforced company as an independent fighting force. Unlike a troop transport, the Grissom delivers the whole package, ready to fight. Using a streamlined 3000-ton self-sealing and laser ablative hull (Hull 40/Structure 40), enhanced with mono-crystalline steel (Armour 4), the Rockford Aerospace Virgil Grissom mounts a Tharsis Power 90 Hyperdrive allowing a speed of 3 parsecs per week; a Nortinghouse N-2140 3 Gigawatt Fusion Reactor and a Tharsis Vector 341 3-G reaction drive. The reaction drive provides an acceleration of 30 metre per second². Fuel tankage comprising 975 tons of liquid hydrogen is used to provide coolant to the fusion reactor for 12 months of continuous operation and by the reaction drive. Adjacent to the bridge is a hardened level-6 IBN MTHR computer mainframe and a basic military sensor array. There are 240 hypersleep pods for crew and passenger use in-transit. Twenty-nine single staterooms and 32 double staterooms serve as accommodation during in-system operations. Marines are garrisoned in 180 Stack-Racks™. The assault carrier is equipped with an armoury, two briefing rooms, six offices, four pairs of detention cells, a 40-ton hospital, a 20-ton staging area, fuel scoops and a suite of fuel processors able to refine up to 900 tons of liquid hydrogen per day. Landing gear is not fitted. The Grissom is a fighting ship and so has a 100-ton AKV bay for the launching of Precision Guided Strike warheads, 6 railgun barbettes and two double turrets fitted with Countermeasures Launchers. There are a set of probe drones and repair robots installed, as well as four Exoframes Workloaders and 4 forklifts for shifting ammunition and stores on the cargo deck and hanger. A 390-ton hanger bay holds six UD-5 Mustang dropships and two CS-9 Thunderchief shuttles. The Marines' 85-ton vehicle deck holds all of the vehicles required for deployment, including: an MM5 excavator, five 20-ton trucks, 5 Growlers and 9 ARCCs. A cargo deck of 379 tons carries supplies and technical spares.

The USS Virgil Grissom requires a crew of 231: commanding officer, exec, science officer, two android technicians, two admin personnel, two pilots, two navigators, four sensor operators, chief engineer, two assistant engineers, two stewards, two doctors, medical technician, three nurses, chief loadmaster, two assistant loadmasters, tactical officer and eight weapons operators. A Marine captain and his first sergeant command the reinforced company of 191 Marines. Both have single-occupancy staterooms, as do the lieutenants and Marine pilots of the unit, the ship commander and exec, chief engineer, chief loadmaster and any official passengers. There are hyperspace pods and staterooms for up to 10 emergency passengers. The Grissom costs $1381M.

VERTICAL ASSAULT CARRIER – USS ALAN SHEPARD V13 4,000 TONS

The USS Alan Shepard [Hull Number V13] is a United States Space Command vertical assault carrier designed to carry a Marine platoon out to a star system for special operations activities. The ship is well-armed and capable of defending itself should the marine landing prove contested; it carries a full platoon and recon team, using dropships and military shuttles to land them on-planet. Using a streamlined 4000-ton stealth-coated, self-sealing hull (Hull 50/Structure 50), enhanced with titanium-diboride (Armour 6), the Leyland Aerospace Alan Shepard mounts a Tharsis 44 Hyperdrive allowing a cruise speed of 5 parsecs per week; a Leyland 5 Gigawatt Fusion Reactor and a Tharsis Vector 400 4-G reaction drive. The reaction drive provides an acceleration of 40 metre per second². Fuel tankage comprising 1,740 tons of liquid hydrogen is used to provide coolant to the fusion reactor for 12 months of continuous operation and by the reaction drive for standard operations. Adjacent to the bridge is a hardened level-6 IBN MTHR computer mainframe and a basic military sensor array. There are 90 hypersleep pods for crew and passenger use in-transit. Twelve single staterooms and fifteen double staterooms serve as accommodation for USSC crew and the Marine lieutenant during in-system operations, there are 48 Stack-Racks for the enlisted Marines. The Shepard is equipped with an armoury, briefing room, a pair of detention cells, a medbay, a 5-ton staging area and a suite of fuel processors able to refine up to 800 tons of liquid hydrogen per day. Landing gear is not fitted. The Shepard is a well-armed ship and has two 100-ton AKV bays, one armed with Kinetic Kill missiles and the other with Precision Guided Strike munitions – the latter is fed by an 8-round AKV magazine. The ship also has two 50-ton particle accelerator bays, two railgun barbettes and two single beam laser turrets used for point defence against incoming missiles. A triple turret holds three CMLs. There are a set of probe drones and repair robots installed, as well as two Exoframes Workloaders and two Voroncovo Forklifts for shifting ammunition and stores on the cargo deck and hanger. A 300-ton hanger bay holds two 40-ton Mustang dropships, two ARCC APCs and two 90-ton Thunderchief shuttles. Eight 10-ton Neumayer escape pods are fitted to allow up to 64 people to evacuate the vessel in an emergency. A cargo deck of 120 tons carries supplies and technical spares.

The Shepard requires a crew of fifty-eight: commanding officer, exec, logistics officer, two android technicians, two admin personnel, two pilots, two navigators, three sensor operators, chief engineer, three assistant engineers, a steward, a medic, eight shuttle and dropship crews, a tactical officer and eight weapons operators. A Marine Lieutenant commands two Marine squads with the assistance of a platoon sergeant (who is a staff sergeant in rank); each squad is composed of 13 men. There are 90 hyperspace pods for the Marines and crew and spare staterooms for 6 observers or military officials. There are spare racks for up to an additional 20 Marines if needed. The Shepard costs $1918M.

Platforms/Unpowered

UTILITY PLATFORM – BAY CLASS 20,000 TONS

The McConnell Bay Class Utility Platform is a 20,000-ton industrial platform designed for customization by the purchaser (typically by a third party engineering or aerospace company). Once fitted out, the role of the platform cannot be changed. It is fitted with a power source, docking clamps for loading and resupply and basic crew facilities for orbital work. The platform is not intended to be manned (with the exception of the Pelican Bay space station type, which will usually not leave its assigned location). Using a 20,000-ton standard hull (Hull 200/ Structure 200) the Bay Class mounts a Northinghouse T67 1 Gigawatt fusion reactor that powers all on-board systems. Fuel tankage of 30-tons supplies the reactor for 12 months. No drives are fitted. The ancillary systems include a 20-ton platform control centre (with integral Hosaka QuadMax level-1 mainframe), twenty staterooms, a briefing room, repair robots, a 48-ton cargo deck and a 32-ton workshop and spares warehouse. Two 100-ton docking clamps are fitted to allow large vessels to offload or on-load cargos pertinent to the role of the platform.

The platform is generally unmanned but it can sustain a team of up to twenty technical personnel to occupy the platform for a week or two while starting up or shutting down operations. The cost of the unmodified Bay Class platform is $2,106M. The following Bay Class platforms give some idea of the versatility of the vessel:

ECS Table Bay *(Bulk Carrier) – This platform is used to haul 18,000 tons of ore across hyperspace. It includes 1500 tons of bulk discharge conveyors. Refit cost: $30.8M.*

USCS Guantanamo Bay *(Container Carrier) – This platform is used to haul 18,000 tons of containers (exactly 6000 3-ton ICO containers) across hyperspace. It includes 1500 tons of container lifts, cranes and transport tracks. Refit cost: $41M.*

USCS Pelican Bay *(Space Station) – This platform has been extensively remodelled as an orbital space station. It includes a 2400-ton cargo hold, a 2000-ton shuttle hanger, 6000-tons of fuel for visiting ships, 800 tons of workshops, a basic civilian sensor suite, four control centers, 200 staterooms for crew, 600 staterooms for visitors, 4000-tons of service modules (shops, amenities, passenger terminal, restaurants, etc.) and ten additional docking clamps for ships up to 200,000-tons in size. Refit cost: $1870M.*

USCS San Francisco Bay *(Fuel Station) - This platform is used to haul 19,000 tons of liquid hydrogen across hyperspace, or to remain in orbit as a permanent fuelling station. It includes 190 tons of liquid transfer manifolds and 120 tons of fuel processors which monitor and refine batches of fuel (up to 2400 tons per day). Refit cost: $37.2M.*

MINING PLATFORM – ECS THURINGIA 116015 100,000 TONS

The UPM-116015 Reiner-Gama Thuringia is a high-capacity mining platform designed for medium-duration mining projects; it requires towing into position and can make a single controlled descent and a single ascent from any world of Size 0-2. Using a 100,000-ton standard hull (Hull 500/ Structure 500) the Thuringia mounts an Erebus Terradyne 2020-XC-23 1 Gigawatt Fusion Reactor and a cluster of Tharsis Type 16C 1-G reaction drives (capable of vectored thrust for planetary landings) used purely for landing and take-off. The reaction drive provides an acceleration of 10 metre per second². Fuel tankage comprising 400 tons of liquid hydrogen is used for a single deorbit burn and, when the platform has completed its mission, a single lift-off and ascent to orbit. Further tankage of 15,000 tons supplies the powerplant for 120 months. Adjacent to the central control room is a level-10 Okuda Generation computer mainframe and a standard civilian sensor package. A second control centre, called the mining operations centre (MOC), is also installed. There are 60 staterooms and Stack-Rack™ accommodation for 1,600 miners and technical personnel as well as two briefing rooms, 12 laboratories and a suite of 18 offices. A pair of detention cells is fitted. The Thuringia has twelve landing gear struts, each with an integral cargo lift (individual capacity 3 tons) and is equipped with a 100-ton hospital with 20 beds. Fuel processors are able to create up to 1500 tons of liquid hydrogen per day if required. The platform is fully equipped for extended mining operations and includes a 9,500-ton smelting bay, 4,000 tons of ore handling equipment, processor bays massing 12,000 tons in total and 10 mining drone units. There are 500 tons of shops and bars for the off-duty personnel, a 1000-ton hydroponics bay and a 1000-ton cargo deck. An ore storage bay masses 50,000 tons, half the capacity of the platform. Carried craft include a single 90-ton Halo supply shuttle, 20 8-ton Seonwu Firefox Tractors, 10 Chevrolet MM5 Bucket Loaders, 20 EH1800 dump trucks, 20 Dynamic 7100 mobile mining lasers and a further 20 GoMo QuadTracks, all carried within a 920-ton garage.

The platform requires a crew of 1,602: commanding officer and an executive officer (who are responsible for the platform as a whole), a pilot (who serves as the chief shuttle pilot once the platform is landed), four communication operators, a chief engineer, three assistant engineers, four doctors, two medical technicians and nine nurses, two shuttle pilots, 10 geologists, 10 senior admin staff, a mining operations manager and an assistant manager (all of whom have stateroom accommodation). Living in the Stack-Racks are 10 junior admin staff, 20 shipping and cargo handlers, 40 leisure and retail workers, 20 catering, laundry and cleaning staff, 62 technicians and 1,400 mining personnel (including drivers and equipment operators). Visitors to the platform may bunk up in the 48 spare racks available, or the 10 staterooms allocated to Company visitors or extra staff. The Thuringia costs $58,780M.

REFINERY PLATFORM – USCS TRINITY 116143 1,000,000 TONS

The UPR-116143 Leyland-Okuda Trinity is a high-capacity petroleum production refinery platform that requires towing from star system to star system. It cannot land on any world surface. The Trinity platform holds a 60,000-ton refinery and tankage for up to 469,000-tons of crude oil that can be refined and separated into 469,000-tons-worth of holding tanks. The platform can process crude oil as it travels through hyperspace. No crew is carried on board, although there is a suite of accommodations and various control stations that can be used by technical personnel that will board the platform to supervise the start of operations, and the shutting down of the refinery once it arrives at its destination. Using a 1,000,000-ton standard hull (Hull 3,333/ Structure 3,333) the Trinity mounts a Nortinghouse T67 1 Gigawatt fusion reactor that powers the refinery and any ancillary systems. Fuel tankage of 900-tons supplies the reactor for 12 months. No drives are fitted. The ancillary systems include a 20-ton refinery control centre (with integral Hosaka QuadMax level-1 mainframe), ten staterooms, a briefing room, a fuel laboratory, repair robots, a 32-ton workshop and spares warehouse. Two 100-ton docking clamps with integral liquid manifold transfer systems are fitted to allow petroleum carriers to offload or on-load petroleum fuels.

The refinery platform is unmanned, but requires a team of up to ten technical personnel to occupy the platform for a week or two while starting up or shutting down refinery operations. The Trinity refinery costs $102,882M.

Colonial Starships

RESOURCE EXPLORATION VESSEL – USCS PANDORA 130748 2,000 TONS

The Voroncovo Pandora is an exploration ship, equipped to survey planets and moons in its hunt for exploitable resources for Transtar, Pandora's owner. It carries a small team of experts who are able to conduct speedy and accurate surveys amidst hostile and challenging conditions. Using a 2,000-ton streamlined and self-sealing standard hull (Hull 30, Structure 30) the Pandora mounts a Tharsis 12B Hyperdrive allowing a cruise speed of 2 parsecs per week; a Terratech TX200 2 Gigawatt Fusion Reactor and a Gulfstar Meridian LCA 2-G reaction drive (capable of vectored thrust for planetary landings). The reaction drives provide an acceleration of 20 metre per second². Fuel tankage comprising 440 tons of liquid hydrogen is used by the reaction drive and can provide coolant to the fusion reactor for 12 months of continuous operation. Adjacent to the bridge is a level-4 Hosaka M7K computer mainframe and a basic civilian sensor package with a full survey sensor suite. There are eighteen hypersleep pods for crew use in-transit and eighteen staterooms provided for orbital lay-overs. A cargo deck of 500 tons carries supplies and technical spares. The Pandora is equipped with landing gear for planetary landings. Internal features include fuel processors that can create up to 100 tons of liquid hydrogen each day, a medbay, briefing room, office, five laboratories, a technical workshop, extendable ore conveyor and both an ore processor system and petroleum refining system. A hangar with drop down access ramp holds two ATVs, four QuadTracks and a Chevrolet Bucketloader. The REV is also fitted with a set of probe drones, two sets of mining drones and an Exoframes Workloader for handling equipment and supplies on the cargo deck. The Pandora also carries nineteen Individual Crew Escape Pods, one for every crewman.

The ship requires a crew of nineteen: commanding officer, android technician, pilot, navigator, medic, sensor operator, chief engineer and an assistant engineer, a four-man security team, chief scientist and six scientists. A spare hypersleep pod and stateroom is included to allow for a Company official to join the mission. The USCS Pandora costs $559.2M.

COLONIAL SUPPORT VESSEL – USCS GREAT LAKES 080417 10,000 TONS

The Wu-Ketai Great Lakes is a colonial support vessel intended as a resupply ship to a growing colony, or as the first vessel as part of a completely fresh colonial development. In the latter case, the Great Lakes remains in orbit to provide technical support for several months as the colonists firmly establish their settlement. Once given the green light, the CSV will return to Earth. Its primary mission is the transport of 2,000 colonists with enough machinery, tools, building materials, seed and fertilizer to a colony world. Using a 10,000-ton standard hull (Hull 90, Structure 90) the Great Lakes mounts an Erebus QUAD 550 Hyperdrive allowing a cruise speed of 2 parsecs per week; a Matsuyama OHK-12 3 Gigawatt Fusion Reactor and a McConnell K39-102 3-G reaction drive. The reaction drive provides an acceleration of 30 metre per second². Fuel tankage comprising 3,500 tons of liquid hydrogen is used by the reaction drive and can provide coolant to the fusion reactor for 24 months of continuous operation. Adjacent to the bridge is a level-4 IBN Centrix computer mainframe and a basic civilian sensor package. There are 2026 hypersleep pods for crew and passenger use in-transit and 18 staterooms provided for orbital lay-overs. A cargo deck of 452 tons carries supplies and technical spares. A medbay is fitted along with a briefing room and two laboratories. Three Miranda class expedition shuttles are carried on external ventral cradles and these are loaded via cargo lifts through their roofs. The bulk of the Great Lakes paying cargo is loaded into two 2000-ton re-entry dump-boxes. The first, the Terraforming Module, holds diggers, vehicles, prefabricated housing, tools and agricultural products. The second, the Heavy Cargo Module, holds construction materials, such as cement, gravel, steel beams, composite building parts, glass and various types of construction machinery. Once deployed, the modules initiate a de-orbit burn and descend into the atmosphere. Parachutes and retro-rockets slow the module for a soft-landing before the clamshell covers open to reveal the cargo within. The module itself is no longer usable as a re-entry vehicle, but it is designed to be dismantled and used for building material by the colonists.

The ship requires a crew of 19: commanding officer, executive/science officer, android technician, pilot, navigator, medic, sensor operator, chief engineer, assistant engineer, three lander pilots, a four-man security team and three scientists. Although the colony site will already have been surveyed and visited, the scientists on-board provide the landing and colony start-up with analysis and advice, and usually comprise a biologist, a geologist and a meteorologist. The Great Lakes costs $2,111M.

MISSION REPORTS

11

This chapter provides the referee with 30 scenario outlines, most of which can be set anywhere in the HOSTILE universe (within reason!). They can be adapted, tailored to a certain type of character or even combined with other outlines to create a more complex story, or a story arc.

Ransom

The mining rig Erebus Juno is taken over by hijackers who want a tidy ransom for the return of the multi-million dollar facility. Whilst Erebus stall for time and get the money ready, the PCs are sent in to try and take back the rig - without gunfire. The rig is pumping liquid petroleum gas (mostly propane and butane) and no gunfire is allowed within the facility under any circumstances. This is to be a peaceful or non-lethal resolution.

Burn Out

A small Off-World colony within the Core Worlds has a rectenna power system, a huge solar power collector station in geosynchronous orbit that beams that energy via microwaves to a large 20 square kilometer array of collection dishes for redistribution to the colony. It has not had enough investment for a fusion reactor. Unfortunately, a group of hijackers has taken control of the station (Powersat GB2) and have redirected the microwaves to fry a small outlying settlement, killing 12 people. They are now threatening to burn up the main colony facility of 1,000 souls, unless the PCs can get aboard and stop them. The hardest part will be getting aboard Powersat GB2 undetected.

Rogue

The PCs are the crew of a starship inbound to an Off-World colony or mining installation, when they get a call that another inbound starship is unresponsive. They are asked to dock and go aboard to ascertain the problem. Cue an exomorph. Use the metamorph for added plot complication!

Desert Driving

On an Off-World colony with some desert terrain, a number of survey rovers have gone missing – inexplicably. They had been sent out to investigate a strange transmission, rovers were used because atmospheric grit in that area is damaging to air and spacecraft. The PCs are asked to take a rover out to investigate the mysterious radio signals and determine the fate of the two lost rovers. In fact the signal is an early US IFF military code being transmitted by an antique US Space Command recon probe, buried under the sand. To get there the rovers have to pass through a wide (10km) valley resembling Wadi Rum that is covered with a salt-sand crust. The rovers fall through weak spots in the crust and both their tracks (and the hole) are then covered over by the daily sandstorms. Can the PCs fare any better?

“Good Dog”

On a sparsely populated Off-World colony, the US Marines are field testing a couple of three-legged scout robots. They are participating in a training exercise with some members of the local Colonial Defence Force (all hard-working part-timers). The CDF are in touch with their men, but cannot reach the Marines and fear, from garbled transmissions, that they have been attacked by native wildlife. The CDF ask the PCs to go into the wilderness to make direct contact with any Marine survivors. Unfortunately the problem lies with the recon robots, that are in fact special-ops assassination droids. These dog-shaped killers have killed most of the Marines and are scouting out the lands toward the settlement. They will make mince-meat of the lightly-equipped CDF defending the perimeter. Perhaps a Marine tech can help and has a way to shut the robo-dogs down…

It Came From Space

A remote mining distribution facility has inadvertently picked up an electro-magnetic signal from space, a ‘living energy’ which inhabits the outpost’s electrical systems. It takes over quickly. The PCs are called in to look at the computer system, or to investigate an inadvertent death. One person is dead already and another who was in the infirmary’s autodoc having a scan is now severely injured. Quite quickly there are a couple more accidents with equipment seriously malfunctioning. The alien energy wants to excavate a vault on the moon or planet that contains the imprisoned souls of its energy-friends. It will try to utilize robots and any diggers or workloaders to accomplish this, but it needs most of the crew dead and out of the way, it also needs a compliant human who will operate codes and doors, and she is the patient who was 'severely injured' in the autodoc whilst having an MRI scan.

Invisible Monster

The PCs are onboard a starship that is involved in salvage work, and the ship they are on picks up some abandoned cargo pods and machinery from a wreck. It also picks up an invisible exomorph. It is human-sized but heavily Armoured and bulky, resembling (if it could be seen) a squat, tail-less, two legged ankylosaur, with two large talons. The creature lays low for a while, and then slowly comes out of its vacuum-induced hibernation. It is undetectable in all areas of the electro-magnetic spectrum, including visible light, infra-red and ultra violet. The creature will begin hunting the crew one by one; it is slow, cautious and cold-blooded. At least one scene should include an NPC being torn apart in front of the PCs, seemingly by nothing. It can track by heat and the electrical activity of the brain. This is what it wants, to devour the brains and feed from the memories inside. Remember this beast is immune to vacuum and is extremely well Armoured.

Convicts

A gang of criminals has escaped from a jail at a settlement on a colony world, long before a Federal Marshal arrives to collect them. Now they are hiding out somewhere - can the PCs hunt them down and bring those who don't resist back to jail? The Colonial Defence Force don't know it, but these criminals are all genetic clones that have escaped from a secret Makita Genetics research facility on the planet. Not only are they soulless and emotionless killers, they have been treated with unlicensed and unstable retrogenics technology where DNA is altered and begins to transform aspects of the human physiology. They have a mixed bag of animal-like abilities, including fire resistance, jumping, Armoured musculature, night-vision and enhanced hearing. The clones are seeking to find a way off world, perhaps by hijacking a ship.

Fountain of Fire

A large explosion is observed in the region of the star system's gas giant and the PCs are dispatched to investigate. There are no starships in communication with the colony and there are no other outposts in the system. In fact the explosion is due to a failed mining experiment to use a revolutionary fusion gun rig to burn through the crust of a rocky moon. Unfortunately there was a malfunction, the well-head was vaporized in the nuclear explosion, and a hole was punched through the crust to the little moon's active mantle. As the PCs approach, they will see a fountain of magma erupting into orbit to dissipate as a cloud of rocky material, now in orbit. There is a secondary drill site, with survivors, but comms are out. The PCs should be able to pick out the site from orbit following a surface scan. A rescue should be mounted, but the ship will have to negotiate a cloud of fast moving, freshly-cooled orbital gravel to reach the surviving installation. The project is so secret that corporate security troops at the site are under orders to wait for a corporate rescue and to prevent with armed force, any other group from entering the complex. Firefights may ensue!

The Raid

A corporation has developed a viral agent of considerable potential and the team are paid by a rival to somehow infiltrate the asteroid lab where it is being developed. The PCs are to steal a canister of the agent and extract the method of its manufacture (chemical composition, etc.) from the lab's computer system. They will need plans if the lab and transport papers or forged documents to allow them to gain access. Perhaps, only ten minutes after they arrive (under whatever pretenses they can muster) the lab staff are notified that a raid is about to take place on the asteroid – now they are alerted!

Comet Inbound

In a distant star system, a rarely-visited colony world is in trouble – a comet is on a direct path to impact the inhabited world, and this will wipe out life there. The PCs and their ship are asked to try and help, to steer the comet away using strap on boosters available at the starport and, after a long burn, change the comet's trajectory. It works! Briefly. There is an explosion on the comet's surface, an outgassing of the comet's chemicals – and the object returns back to its killer course. Why? This is an intelligent attack by persons unknown, they have planted a ring of nuclear weapons around the comet's circumference and they are detonated as needed to vent the comet's gasses and steer it toward the planet. A control station exists on the comet, the PCs missed it the first time round, they may discover it if they revisit the comet's surface. If they dare, they might get caught in another blast… After examining the control unit they may discover that the operator must be close in order to command-detonate the bombs as needed. Is there a small ship nearby, perhaps powered down, following the comet's own trajectory. Or is the operator actually *on* the comet? Even better would be if the operator is an NPC on the players' own ship!

Tsunami

The PCs are asked to conduct a rescue mission on a colony world, a tsunami has flooded a settlement near the coast. A Company exec wants to go back (with the PCs along as security) to recover important mineral or survey data from a flooded installation. Unfortunately the flooded building is now occupied by undiscovered marine predators that were washed into the settlement. They resemble octopus, but propel themselves along with a rotary motion. What are these records, why are they so important? Perhaps the real mission is to recover a unique pharmaceutical substance found at sea, an organic 'Royal Jelly' with potentially useful properties. And the squid-like predators swimming around the half-submerged building are looking for it, they want it back! Survivors will need to be rescued too, and the potential for an aftershock and second tsunami is always high…

Docking Failures

A tug ship emerges from hyperspace early and the crew are woken. Checking with the computer, they find they are in the middle of nowhere, light years from a star system. The computer says that the towing connection is not locked and that is the reason for the drop of hyperspace. It must be undocked from the

platform and re-docked again. As they decide what to do, have one or two characters start to get ill – this is a red herring, however, to keep everyone involved. But it doesn't work! The connection is still bad! If they do an external inspection, they find that latches 4 and 5 have sheared off at the tips. The only way to get out of here with the platform is to somehow fool the computer into thinking the connection is secure. This scenario is simply a maintenance issue, although to complicate matters, perhaps as they decide what to do, a salvage ship drops out of hyperspace near them, ready to tow away the platform if they cannot. This would imply an elaborate conspiracy to seize the platform by 'lawful' means, however.

The Magnificent Few

The PCs are hired to provide support and transport for a group of independent miners who have pooled their money, resources and skills to go prospecting for rubies in a tough, unforgiving and harsh environment on the planet. However, they are cash-strapped, relatively inexperienced and have no real leader other than the geologist they have hired to suggest locations for prospecting in the field. The PCs must arrange for transport and the purchase of local kit and set up a pre-positioned temporary base or them. They will arrive soon, but the geologist is already there to help co-ordinate the expedition's needs. During the set-up the weather becomes extremely bad, making the process very dangerous. After that, the PCs can transfer the miners to the site and leave them to work. Some weeks later they get a call to pick up an injured miner, attacked by local wildlife. When the PCs get there, ahead of a storm front they suffer engine failure and cannot take off. The storm arrives and lots more of the native predators attack. The miners are disorganized, quarrelsome and unarmed, and must depend on the skill and professionalism of the player characters to defend them and get them, their kit and their haul of rock samples and rubies out of there.

Stasis Leak

The ship drops out of hyperspace and everyone is woken. Readings suggest they hit a hyperspace anomaly and that there has been some damage. It is only minor, when the crew check, but they do discover a stasis leak, a portal through to their ship in the future (perhaps two weeks into the future). This version of their ship is a mess, sirens are blaring, warning lights are flashing, one crewman is badly injured and in an autodoc, all others are dead from blunt trauma and knife attacks – they killed one another. Well, not all… two of the crew (their future selves) are still alive, insane and ready to murder their past selves and each other. This whole future will come to pass in the real world unless they can figure out what went wrong. The ship's systems are not being maintained and the fusion reactor will go critical in 4 hours and there is nothing the PCs can do about it – they have a 4 hour deadline. What happened? About a month ago the ship was hit by a meteor that caused some hull damage (all of the PCs will remember this, they helped to fix the damage). Unfortunately, some damage to the recycling system went unnoticed. The ship took on water from a colony, but the system did not properly purify it or detect the growth of thermophilic bacteria. This has spread, unchecked in the water tanks, and like cyanobacteria on Earth, when consumed it does physiological and psychological damage.

A bacterium in the drinking water has sent the crew insane. To find this out perhaps an autopsy could be performed, or readings from the autodoc analyzed. The bacteria will show up in the liver and kidneys, and it has altered the chemistry of the brain. They still have to figure out how the bacteria got into the crew. The ships log might jar their memories, especially if they look at systems close to the hull damage that was fixed, leading them to the water recycling machinery. They might then find the bacterial bloom in the water tanks. All the while of course, the PCs are being hunted by crazed versions of themselves! Perhaps a saving throw of some kind would be required to actually harm another version of yourself from the future …

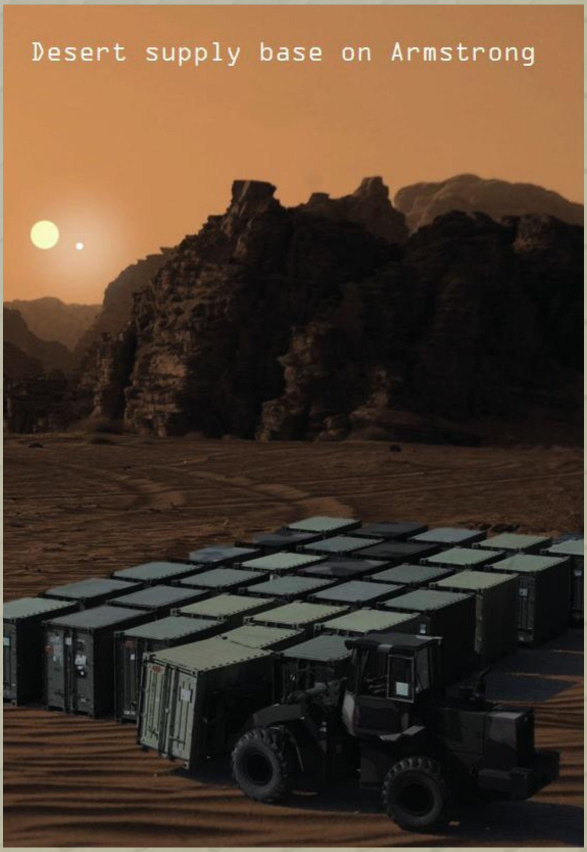
Emergency Extraction

It transpires that a geological survey of a region on Tau Ceti, conducted before the war began, was tampered with and there are rumors that the area is actually mineralogical treasure trove. A fresh survey team was recently dispatched and was returning in a tilt-rotor when the plane was shot down by Chinese forces, coming down in hostile swampland. The Company want the PCs to go out to the crash site, rescue any survivors and bring back that survey data (held within a portable terminal). They will face a hostile terrain, hostile wildlife (swamp—skimming bat-like 'screamers') and of course the hostile irregular forces of the Chinese forces. At the crash site, rescue and retrieval might go as planned, or the referee might prefer to have the Chinese rebels get their first. In this case, the terminal and the prisoners will now be at a secure compound near the local village, whilst the rebels wait for Chinese intelligence officers to arrive.

Hitchhiker

The ship receives an emergency signal from a tiny asteroid outpost, the scientist there has communication problems and urgently needs a spare part for his FTL hyperwave communication system. The PCs have one, will they sell it to him, and also fit it? He will reward them with a nice bonus! The crew will be the guests of himself, his daughter and two other scientists. They are working on a new type of mining robot. In fact, the scientist is a disgraced android design engineer from TransDyne Cybersystems who has fled to this obscure rock to plan his revenge on that company. His daughter and the two aides are all killer androids that he has built whilst on the asteroid for this purpose. During repairs the daughter may break down, cry and beg the PCs to take her with them to Earth, their next destination, she says her father is cruel and will never let her leave. This is planned, the girl is programmed to make her way back to Earth to assassinate key individuals within TDC. If they refuse she will understand, but the scientist will be forced, in that case, to drug the crew and put his aides on the ship, with his 'daughter' as passenger. If they agree, they have just taken on a lethal android assassin who will steal their shuttle when in the Solar System to avoid ICO customs and immigration. Perhaps there is a clue left onboard to her true nature, and they must track her down and terminate her before she starts her killing spree.

There are clues on the asteroid that the PCs might spot; the spare part they have supplied is actually in the asteroid's warehouse – just not on the manifest. There is another ship, docked at a secondary airlock that the scientist says is an old, deactivated transport ship. He tells them not to go aboard. This ship represents the last attempt the scientist made to get his assassin to Earth, but the crew fought back, sabotaged their own ship and were all killed. Their bodies remain on board.


Desert supply base on Armstrong

Shooting Gallery

One of the Off-World colonies has a moon rich in minerals. The administration has decided to build a huge rotating habitat in orbit around the colony world and it will be built with material from the moon, shot into orbit by a linear accelerator mass driver. There is opposition to the plan from port workers on planet, however, and so a band of terrorists have landed on the moon in a shuttle and seized the mass driver complex. They are threatening to drop rocks on the colony, and even to target the orbital habitat that is under construction. They want it stopped. Marines are on their way, but will not arrive for two days. Can the player character technical experts land stealthily on the moon and deactivate the mass driver without destroying it?

Scam

A colonial government owns the moon of a gas giant in the system, it was surveyed years ago but nothing of any value was discovered. A mining corporation has recently obtained limited mining rights on the moon and has been spreading rumors that there are actually vast mineral deposits there. To check out these rumors, the colonial government has dispatched a new survey mission to the little moon. It will simply collect samples for analysis back on the colony world. The Company hires the PCs to find some way to intercept the shipment of ore samples and switch some of the real samples, with their 'salted' ore samples. Once the government announces that there really are good indications of mineral deposits on the moon, stocks in the Company will rise and it intends to sell those mining rights to an unsuspecting buyer for a great profit. Where will the PCs intercept the ore? In transit on the in-system shuttle? At the starport? At the assay office the night before it is analyzed? The later they leave it, the bigger the margin for error they have.

Quarantine

A desperate individual needs to get to Earth and past ICO quarantine at Liberty station, she will pay a very large sum of money. She claims to be a wealthy heiress (and sounds and looks the part) who has been cheated out of her fortune and estate in New York, whilst she was visiting the Off-World colonies on business. She does not want the new beneficiary (her sister) to know that she is back until she can create a counter-strategy to regain her fortune. The heiress has a hyperspace pod that can be placed in the cargo bay and plugged into the ship's systems. Can the team smuggle her past ICO quarantine? Will they need the help of members of the Snakeheads crime gang for this? In Earth space the ship will be stopped and searched by Antarctic Traffic Control – a routine inspection – can the heiress be safely hidden? Finally, is she what she appears? What if she is infected with some form of alien parasite or virus? If so, does it 'manifest itself' in the public shuttle during the descent from Liberty station to JFK airport, with the PCs aboard? Perhaps she is a wanted criminal, or a clone? In that case her associates at Liberty station may want to kill the PCs to stop them talking about their illegal passenger.

It's Lovely Weather We're Having Isn't It?

A crucial part for a new mining rig needs to be off-loaded on Oppenheimer, a planet orbiting the white dwarf star Sirius B. Some parts are already in place, although only a skeleton construction crew from Tharsis Corporation is on site at the moment. The part, a beam-mounted evaporator – essentially a set of four gigantic jet engines, is large, difficult to handle and will be the focus of this scenario. Getting it off the ship will be hard, getting it over to the site will be hard and fitting it inside the rig's shell will be hard. The atmosphere is made up of hydrogen which is pervasive and flammable, the weather is also very nasty. Visibility is poor, grit and sand clog everything, there will be equipment failures, suit failures and engine failures… it will be a punishing slog to get this evaporator fitted. The team's vacc suits will only protect them from hydrogen seepage for around 4-5 hours (after 4 hours, roll 1D6 – on a '1' result, the inside of the suit will catch fire. If the result of the 1D6 is 2-6, then continue to re-roll the 1D6 every ten minutes …). Hostile environment suits have better protections installed, and will last 7-8 hours. The danger here is rushing to get the job done in 4 hours without causing mishaps or injuries.

Mayday, Mayday … Comet Calling

A mayday call has been received from a comet heading on a close-encounter course with the system's red dwarf star; it is a so-called 'sun-grazer' type of comet. To rendezvous with the accelerating comet will be a difficult maneuver, of course the proximity of the star will also play a factor, the starship is on the very limits of its thermal protection. How further can the crew push it? It's like a submarine diving ever deeper – no-one has tested it to destruction (yet). The comet is tumbling crazily and is also venting gasses as it reaches perihelion (closest point to the star), huge jets of gasses kilometre in height. Can the starship be landed in these conditions? The distress beacon was activated by miners who were searching for organic materials including methanol, hydrogen cyanide, formaldehyde, ethanol and ethane on the comet when it was much deeper in the system. Unfortunately due to an accident, the miners lost their air supplies and put themselves into hypersleep, sending a message to the main colony world that they required immediate resupply. It seems the message never reached the right inbox, because fourteen years later, the miners are still sleeping on their sun-grazing comet. As the starship attempts a landing, the automated beacon will bring the miners out of hypersleep.

Deadly Impact

In a system containing a colony world with a fairly low population, an asteroid has just been identified as having a trajectory that will mean it impacts the planet in 96 hours. The player characters have the only starship fast enough to make a difference and should they agree, the colonial government's plan is to use nuclear mining charges to break the asteroid into two pieces, each with new trajectories. The asteroid is around 10 million km away at the start of the game and is moving at 30 kilometre per second. This is a race against time with the player characters moving from planet to asteroid, picking up what nuclear charges the government has managed to gather in from mine installations across the region. Assume each time they land there are 1D6-3 new charges waiting (minimum of 1). Assume for simplicity's sake that each visit to the planet takes 12 hours (landing, dealing with authorities, rioters and panicked individuals, taking off and landing on the asteroid. The EVA may not take long, but if the crew wish to drill down into the asteroid to significantly increase their chance of success, then 8 hours setting up the rig and drilling must be spent doing so. The miners can supply equipment and a few advisors if needed. All kinds of things can go wrong to delay the characters, including equipment failures and incidents with locals or PC miners. Roll to assess the success of each detonation, a number of damage points will be needed to break apart the asteroid and force each piece to pass harmlessly around the stricken planet. The later the attempts are conducted then the greater the angle of deflection will be required and the more energy and damage points will be required to achieve it. In other words, it is possible to leave it too late … the task gets harder as the asteroid gets closer! See the table below for the chances of success:

Time Remaining (in 12 hour units)	*Total* Damage Required For Success
96	12
84	14
72	16
60	18
48	20
36	22
24	24
12	26

Surface Explosion: **2D6**
Deep (50m) Explosion: **3D6**

Each extra device detonated at the same time will add a +4 DM

No Response

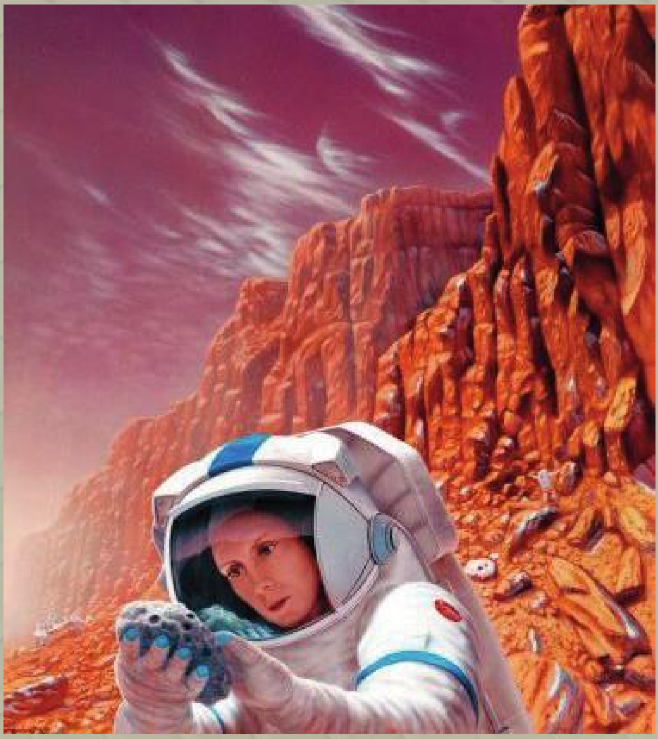
A remote space station (perhaps out on the fringes of a star system, orbiting a gas giant) is frequently used by the player characters as a stop-over, but it is not responding to communications, although it seems to be under power and its navigation beacons are active. The silent space station requires investigation. It has in fact been taken over by a shipment of convicts who killed the deputy marshals who were escorting them. They have killed a dozen of the 32-stong crew of the station and taken the rest hostage. Now they need a ship and don't intend to scare the PC's vessel away, rather lure it in with a mystery. The convicts won't show their hand too early, allowing the ship to dock or the team to come over in suits, and the player characters to nose around a little bit. They'll find some bodies, perhaps one of the marshals, and maybe get sucked into a diversion organized by the leader of the criminals whilst some of his men try and get onboard the starship (in suits via EVA if needed). If they have docked, then the convicts activate clamps that hold their ship in place – the PCs can't get away even if they wanted to, the clamps need to be deactivated at the dockside machinery station. The station's self-defense missile turret also needs deactivating, and that can only be done from the control room, currently occupied by the convict leader and his best men.

In the Filters

It's time to refuel and so the PC's starship enters the upper atmosphere of a gas giant in the depths of some frontier system in order to skim hydrogen. This will be processed by the ship's equipment into refined liquid hydrogen and pumped into the fuel tanks. Unfortunately, something else was brought on board during the ram-scoop operation. The scoop is showing high-pressure readings in the red during the maneuver and there is a small explosion, but it continues to function. If the crew check this out, they will find its industrial-sized filters are clogged with pulped organic matter. This is the remains of a 'floater' a balloon-like lifeform that floats on the powerful atmospheric currents of the gas giant. The scoop also took in much smaller 'sinkers' the early developmental form of the manta ray-like 'hunters' that usually feed on the floaters. These three fist-sized sinkers have made it through the filters, through a hull section damaged by the small scoop explosion and onto the ship. Within 24 hours, due to the oxygen rich environment, the sinkers develop into hunters. A little like bats or pterodactyls, they can walk upright, but they are large and ferocious. It is also tough and can curl up tight within its own wings and hide in small spaces.

Lost in Space

The starship crewed by the PCs drops out of hyperspace in the outer system to rendezvous with a corporate transport ship that has a senior vice president on-board. The PCs will ferry him to his next destination for the surprise inspection of a facility. But – the ship is not there. Careful scanning will however pick up three people in vacc suits, floating free in deep space. Two are dead, the third is almost crazy with her ordeal. The corporate ship was hijacked by the android on-board, a Carol model, she went haywire, forcing the seven-strong crew into spacesuits and out of the airlock at gunpoint. She took the ship back into hyperspace. Where? Why? Well, the survivor, the ship's navigator says that she glimpsed Carol reprogramming the navigation system for a very short hyperdrive jump, suggesting it was either in this current system somewhere, or in the neighboring star system. The VIP executive must be rescued. In fact Carol was reprogrammed by a corporate rival to specifically kidnap the exec and the data he was carrying inside his portable terminal, and deliver it to those rivals waiting in the next star system. There, in an old mining ship, will be waiting a bunch of freelancers with guns and attitude, ready to take delivery of the executive. This exec is no push-over, however, he is a practical man with decades of hands-on mining experience. When he sees an opportunity during the ship's burn toward the nearest planet, he activates the mining ship's asteroid handling arms, which fail to take the stress, buckle and cause the drive system to shut down as a failsafe. Now they are coasting, and the freelancers will probably get the drives working again within a few hours. Is that enough time for the PCs to arrive, board the ship and save the day?



Rage Against the Machines

On a hostile moon or asteroid, the Company has started using mining drones extensively. Recently, the miners have broken through into hexagonal-shaped silica mineral beds. Just a few metre deeper inside a crystalline chamber are several alien intelligences and to protect themselves they take control of the mining drones, turning them against their operators and attacking the control rig on the surface. The operators believe that the drones are malfunctioning, and that the silica minerals are interfering with microwave communications. The PCs might be the miners and operators, they might be spacers, having just unloaded supplies, or experts brought in from another location in the star system, purely to investigate the strange behaviors of the drones.

Into the Obsidian Desert

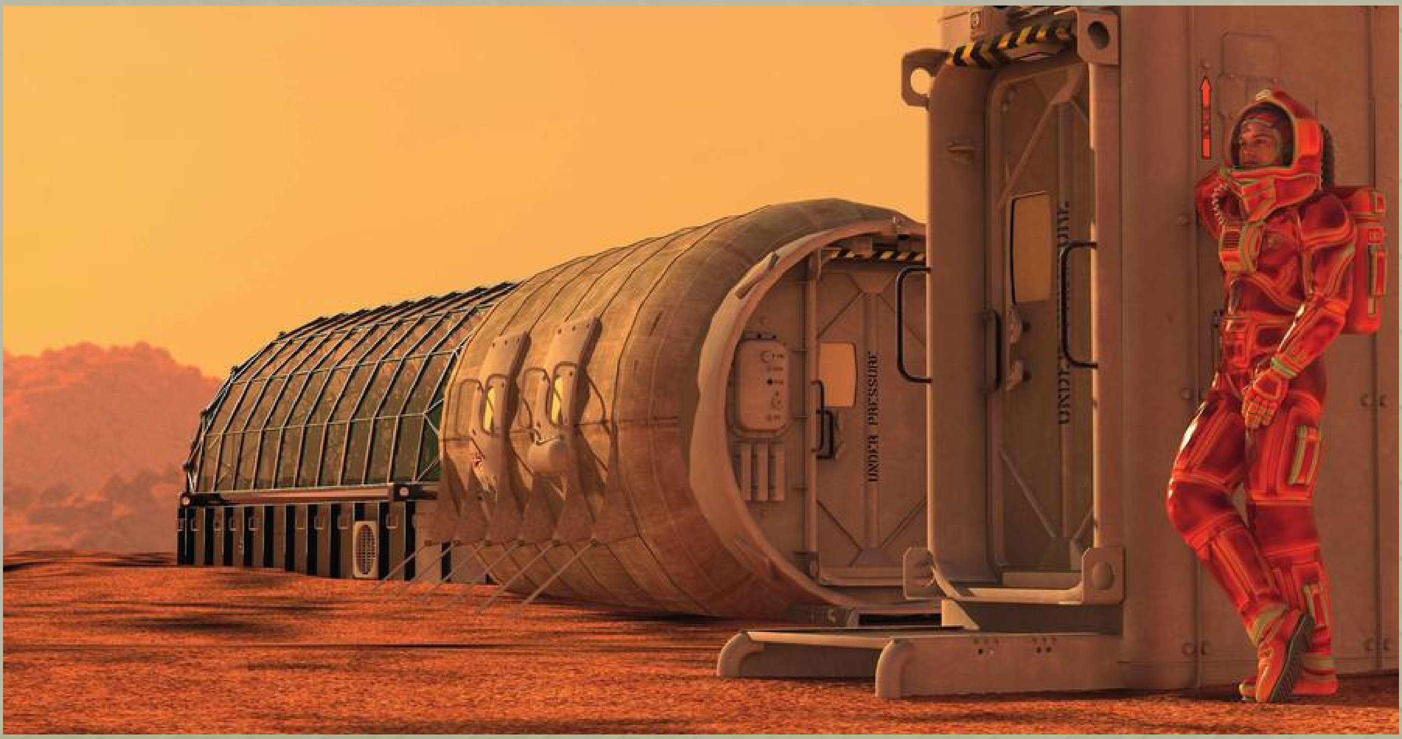
The planet Aurora (orbiting star UV Ceti) is ravaged by the most intense solar flares ever experienced by Mankind. Bunkers and shelters protect the population during these deadly storms, but one month ago, an entire settlement of human colonists on the edge of Obsidian Desert disappeared. There were no communications and a Colonial Defence Force that conducted a brief search found none of the 34 colonists. Parkfield Corporation hires the PCs to carry out a more thorough investigation. What has occurred? In fact, Auroran Worms (until now an undiscovered species) have attacked the settlement, killed half a dozen people, swallowed several vehicles and undermined a few buildings. There may be a few survivors hiding out a few hundred metre away, where they have climbed to the top of a central communications tower. Getting to them will be difficult, there are several smaller comms towers around the central one and this makes landing any kind of flying machine there impossible. The PCs will somehow have to make the rescue on foot or in a ground vehicle.

The Island

A year ago, on the super-Earth called Inferno (orbiting the star Groombridge 34) an anomaly was noticed. At the magnetic north pole of this perpetual lava world there was a large region of stable, non-erupting land – some 1,000 square kilometre in area. A scientific base was established to try to discover the link between a stable crust and the powerful lines of the magnetosphere that pass through the crust at that spot. However, wild-shifts in the location of the magnetic north pole recently have meant that this 'island' of stable rock is rapidly coming to an end, like a melting iceberg. Within days the entire region will break up to become lava washed badlands, deadly to human life. The PCs are ordered to use their starship or spacecraft to get the team and their kit out. Fast. Of course, there will be problems! Lava plumes, shifting land, earthquakes, fault lines opening up beneath them, missing scientists who have yet to return from collecting important instrument readings, and so on…. The powerful and fluctuating magnetic fields in this region will start to shut down critical sensors and electronics the longer they remain.

Union Blues

The PCs are hired by the Union of American Space Labor (UASL) to investigate a report of worker's rights being violated on a mining site in the Outer Rim. The characters might be rotated on to ship supplies to this installation, hence the approach from the UASL representative. The violations are extremely serious and amount to slavery or servitude; there are reports that the tiny station (crew of only 6) which operates mining drones almost exclusively actually has dozens of indentured miners working there against their will. They may be illegal Off-World workers that were tricked into the job and now have no way off. The supply ship each month picks up ore and drops of minimal supplies and spares for the drones, the miners have no way off - if it is true. Should the PCs investigate, they are going to have to manufacture an excuse why their ship should linger and why they should have access to the little station. It is, of course, true – the mine is a Snakehead's operation using forced labor, it is essentially a prison camp. When the team see a Snakehead's leader execute a worker for insubordination, it should consider rescuing them all! Of course the Six Snakehead's mining operatives will try to stop them. They are well armed and ruthless.



MINE ROSTER - SHIFT 3

Week Beginning: 7-11-2225 **Signed:** GlK-

Floorhand Dermot Mulroney	658554	Age 26 2 Terms
Gambling-1, Vacc Suit-2, Comms-1		
Origins: Galveston, TX Appearance: White – blonde, short beard		
Psych Evaluation: In an affair with another floorhand; he has violent mood swings.		

General Manager Dallas Roberts	779A86	Age 46 7 Terms
Vacc-2, Computer-2, Engineering-3, Mining-1, Streetwise-1, Ground Vehicle-2		
Origins: Spokane, WA Appearance: White – greying hair, piercing blue eyes		
Psych Evaluation : Wants to get ahead in the Company – by any means…		

Floorhand Blythe Henrick	658654	Age 26 2 Terms
Vacc Suit -1, Electronics-2		
Origins: Phoenix, AZ Appearance: Oriental – Hair in a plait, black nail varnish		
Psych Evaluation : In debt, Blythe needs money; she is not phased by threats		

Driller Joe Anderson	A9B778	Age 30 3 Terms
Ground Vehicle-1, Vacc Suit-1, Comms-1, Mining-2		
Origins: Ringgold, GA Appearance: White – tall and muscular, pinched features		
Psych Evaluation : Arrogant and argumentative; money means everything to him		

Toolpusher Joe Maroni	885845	Age 38 5 Terms
Mining-3, Ground Vehicle-1, Vacc Suit -1, Demolitions-1, Brawling-2		
Origins: New Jersey, Appearance: White – dark hair, grizzled, short		
Psych Evaluation: Ambitious manipulator with a strong sense of loyalty to his comrades		

Superintendent Lisa Taiget	5A4788	Age 34 4 Terms
Engineering-1, Vacc Suit-1, Computer-2, Mining-1, Comms-2		
Origins: Sacramento, CA Appearance: Black – slim figure, short-cropped hair		
Psych Evaluation : Loyal to her team; but takes bribes from miners for cushy jobs		

Driller 'Joker' Diaz	757868	Age 42 6 Terms
Vacc Suit-3, Mining-2, Mechanical-2, Gambing-1, Brawling-1, J-oT-1		
Origins: Duluth, MN Appearance: Hispanic – balding, lined face, big eye-brows		
Psych Evaluation : Believes in justice and fairness and this gets him into a few fights.		

Roustabout 'Bull' Flannery	878875	Age 26 2 Terms
Vacc-2, Mining-1		
Origins: Detroit, MI Appearance: White: Tall, square-jawed, pony-tail		
Psych Evaluation : Has an aggressive streak, he is a loud-mouth and braggart		

THARSIS
CORPORATION

RED GIANT

Captain (male)	787988	Age 46 7 Terms
Pilot-2, Vacc Suit-1, Comms-2, Computer-2, Broker-1, Engineering-1, Loader-1		
Origins: Detroit, MI Appearance: White – black hair, beard		
Psych Evaluation: Ground down by the Company, the Captain is disillusioned		

First Officer/Pilot (male)	698897	Age 39 5 Terms
Pilot-2, Vacc Suit-1, Ground Vehicle-3, Computer-1, Electronics-2, Navigation-2		
Origins: Chesterfield, UK Appearance: White – short dark hair, grizzled features		
Psych Evaluation : Curious and scientifically minded, the pilot is an optimist		

Second Officer/Navigator (female)	477987	Age 30 3 Terms
Vacc Suit -2, Navigation-2, Medical-1, Comms-1, Computer-1		
Origins: Los Angeles, CA Appearance: White – blue eyes, short blonde hair, cowboy boots		
Psych Evaluation : Needing the pay, the navigator does her job, and that's it.		

Third Officer/Comms Ops (female)	699998	Age 30 3 Terms
Comms-2, Loader-1, Pilot-1, Vacc Suit-1		
Origins: New York, NY Appearance: White – tall, long, dark curly hair		
Psych Evaluation : Ambitious, with a fierce streak of rebelliousness.		

Fourth Officer/Medic-Scientist (male)	888AA8	Age 47 7 Terms
Medical-3, Comms-2, Ground Vehicle-1, Computer-2		
Origins: London,UK Appearance: White – clean cut, short hair, quiet		
Psych Evaluation: A calm, hard-working science officer, stubborn when pushed.		

Fourth Officer/Chief Engineer (male)	A88884	Age 40 5 Terms
Engineering-2, Brawling-1, Loader-1, Mechanical-2		
Origins: Irvine, KY Appearance: Black – tall, blue headband		
Psych Evaluation : Lively and argumentative engineer - with a temper.		

Crewman/Assistant Engineer (male)	556685	Age 53 8 Terms
Engineering-1, Electronics-3, Loader-2, Mechanical-1, Ground Vehicle-1		
Origins: New York, NY Appearance: White – thin, dark hair, Hawaiian shirt		
Psych Evaluation: Laconic assistant engineer, once an officer. Follows the chief's lead.		

STARSHIP CREW MANIFEST

USMC

US MARINE CORPS

Lieutenant Aaron Eastwood	9899A9	Age 26 2 Terms
Gun Combat-1, Tactics-1, Recon-1, Computer-2		
Origins: San Francisco, CA Appearance: Black/Male - Clean-cut, clean uniform		
Psych Evaluation: Amiable and co-operative young officer, but not easily frightened		

Staff Sergeant James Badge	A9C886	Age 34 4 Terms
Gun Combat-2, Blade Combat-1, Ground Vehicle-1, Brawling-2		
Origins: Mason Falls, IA Appearance: White/Male – blonde, broken nose		
Psych Evaluation : Loves to fight, he loves the rush – but he is generous to a fault		

Sergeant Shanya Dale	76B757	Age 31 3 Terms
Brawling-1, Gun Combat-3, Mechanical-1,		
Origins: Jacksonville, FL Appearance: Black/female– tattooed neck and arms		
Psych Evaluation : Looks forward to combat, but she is very aggressive out of combat too.		

Private Susan Kosor	699558	Age 26 2 Terms
Electronics-1, Gun Combat-1, Medical-2		
Origins: New York, NY Appearance: Oriental/Female – slim faced, quiet		
Psych Evaluation : Strong sense of justice and truth, also desperate for more responsibility		

Corporal Billy 'Rafter Man' Jones	8B6573	Age 22 1 Term
Gambling-1, Gun Combat-2		
Origins: Rapid City, SD Appearance: White/Male – blue eyes and blonde hair, big smile		
Psych Evaluation: Always on the take and easy to bribe, Billy is ambitious and manipulative		

Private Lewis Hernandez	7CC887	Age 26 2 Terms
Gun Combat-1, Vacc Suit-1, Heavy Weapons-2		
Origins: Louisville, KY Appearance: Hispanic/Male– wide face, serious, never smiles		
Psych Evaluation : Ruthless, with his own unspoken agenda, he is not easily intimidated		

Private Jon 'Easy Rider' Colter	B98645	Age 22 1 Term
Recon-1, Gun Combat-2		
Origins: Lake Charles, LA Appearance: White/Male – sunglasses, laid back, black hair		
Psych Evaluation: A good-time guy who seems lazy, but he is loyal to his comrades		

Lance Corporal Callum Irving	88A577	Age 23 1 Term
Leader-1, Gun Combat-1, Heavy Weapons-1		
Origins: Jacksonville, FL Appearance: Black/Male–Tall and lanky		
Psych Evaluation: Leadership material, very stubborn and hard to dissuade		

Troop assignments – Bravo Platoon
Authorized : Lt S.Wise .

Maximum Load: 20 Million Metric Tons

THARSIS AEROSPACE
HERCULES

A true general-purpose work horse, the Hercules hauls the largest platforms, cargoes and unpowered vessels across the Outer Rim.

New Type 22 plasma motors provide an un-paralleled 80m/s² acceleration [unloaded].

> *"Towing vessels don't get any bigger or more powerful than the Tharsis Hercules....."*
>
> *- editor, Upstream*

- *Aerodyne GRR Hyperdrive [4pc/week]*
- *Nortinghouse N-2306 4 Gigawatt Fusion Reactor*
- *2x Tharsis Type 22 8-G Reaction Drives*

THARSIS
CORPORATION

UPSTREAM

NEW LABORS FOR HERCULES

Upstream Reporter – Lucas Bodeman

"I've worked Off-World for more than twenty years and the Hercules is by far the most powerful vessel I have ever served on. Refinery and mining platforms that were once considered giants are now dwarfed by hundred mega-ton platforms. Braniff's new An Ho refinery platform, for example, displaces an incredible one million tons! How d'ya shift a thing like that? Tharsis has been keeping ahead of the game, its Type 22 fusion plasma motors are able to sustain thrust levels of 8G consistently without the overheat and shut-down problems experienced by other manufacturers like McConnell Aerospace. My chief engineer always said they should've called the Hercules the Godzilla instead – he said it's the monster-king in a universe of monster-size ships."

Captain Kerigan Schaeffer, Frontier Line

It's finally here, at last, the long-awaited Tharsis Aerospace Hercules, the most powerful star tug in service to date has begun its commercial life. Orders from all of the main starlines have been fulfilled and for the past six months they have been hauling immense loads out to the Off-World Colonies – and back. It's about time Upstream Magazine caught up with this behemoth to find out how it ticks. This article includes a rundown of the vessel's revolutionary powerplant, its towing ability, specs and performance table, and of course, Upstream Magazine's usual deck-by-deck walkthrough.

THE MANUFACTURER'S SUMMARY

The Tharsis Hercules is a commercial towing vessel built by Tharsis Aerospace. Using a 15,000-ton standard hull (Hull 100, Structure 100) the Hercules is used to tow large industrial platforms to and from their work-site. It mounts an Aerodyne GRR Hyperdrive allowing an unladen high cruise speed of 4 parsecs per week; a Nortinghouse N-2306 4 Gigawatt Fusion Reactor and two Tharsis Type 22 8-G reaction drives (capable of vectored thrust for planetary landings). The reaction drives provide an unladen acceleration of 80 meters per second^2. Fuel tankage comprising 12,450 tons of liquid hydrogen is used by the reaction drives and can provide coolant to the fusion reactor for 12 months of continuous operation. Adjacent to the bridge is a level-5 Hosaka Goldstar 400 computer mainframe. The ship is equipped with a basic civilian sensor package. There are seven hypersleep pods for crew use in-transit and seven staterooms provided for orbital lay-overs. Cargo capacity is 216.5 tons. Special features include a dorsally-mounted docking clamp that allows the Hercules to pull platforms massing as much as 4 million tons and a 4-ton medbay. A 20 ton Aerodyne Lifeboat is carried on an external ventral mounting and a 2 ton Advanced Motors utility jeep is carried inside a bay adjacent to the cargo hold.

The ship requires a crew of seven: commanding officer, pilot, navigator, medic, sensor operator, chief engineer and assistant engineer. The ship cannot carry any additional passengers. The Hercules costs $4,734M.

NEW ENGINES

At 15,000 tons the Tharsis Hercules is the industry's newest and biggest star tug. It is built around a Nortinghouse N-2306 4 Gigawatt Fusion Reactor installed in a duplex arrangement, each reactor section paired with - and powering - a single reaction drive. The reactor utilizes a deuterium/tritium reaction fusing the fuel elements in a containment chamber with conversion lasers. Tharsis have developed a revolutionary artificial gravitational confinement technique that was first tested and pioneered in the Tharsis Vector 400 reaction drive (used in a number of American military starships). Helium-4 is a byproduct of the reaction and is stored separately and typically vented at regular intervals. Power is generated by the reactor in a closed-cycle liquid hydrogen cooling system, running off into an induction torus which uses the intense magnetic field created by the superheated hydrogen to generate electrical power for the ship. The Type 22 Tharsis plasma drives manage and control an exhaust with an 8G, 80 meters per second, delta-V created directly by the Nortinghouse reactor using liquid hydrogen as a reaction mass.

The hull is designed with two reaction drive sponsons, one to port and one to starboard. Liquid hydrogen fuel for the drives is held in twenty-six separate fuel tanks located both within the sponsons and throughout the central hull. It is in this central hull that the control areas, living sections and cargo bays are located. The upper surface is dominated by both an unpressurized housing for the ship's lifeboat and, at the rear, by the impressive towing point that is able to transfer the acceleration of 8G from the Hercules - through the coupling - to a platform up to four million-tons in displacement. Internal cargo bays, each two stories high and with a capacity of 216 tons occupy areas on decks C and B. Cargo is loaded via two large capacity cargo elevators that lower to the ground when the ship is landed at a starport. Docked at an orbital station, the elevator floor can be extended on tracks out from the ship's lower hull in order to allow it to be filled with cargo by an orbital loading craft. Cargo transport is, however, a secondary role for the mighty Hercules.

HAULING LOADS

The Tharsis Hercules is a commercial towing vessel. Typically the Hercules will be maneuvered underneath and to the bow of an orbiting platform. The docking procedure, whereby the tug mates its upper towing clamp with the forward docking ring on the platform, takes around 15 minutes once both vessels have rendezvoused in orbit. There is no access for personnel between the tug and the platform (or towed vessel) through the docking clamp. It is common for a large refinery to be operational on automatic during its transport through hyperspace, for this a technical crew must first board the platform by shuttle and initiate the automatic procedures, prior to the Hercules docking. Once docking has been successful, the mining crew will depart the refinery on the shuttle that brought them there. The Hercules can then get underway. Other platforms, such as bulk cargo or empty utility platforms require no such start-up. Some, such as the 100,000-ton Thuringia class mining platform will be carried to a star system with a full crew complement onboard. Communications will be active between this platform and the tug via hardwired com-links routed through the docking coupling, as well as normal radio relays when in normal space. During hyperspace transit, all coms are through the hardwired connection, and there can be no movement of shuttles or space-suited individuals from the tug to the platform, or vice-versa – they are, for all intents and purposes cut off from one another. To initiate a landing on a planetary surface, the Hercules must undock from the platform, and leave it in a stable orbit around that same planetary body. ICO regulations state that a manned platform must be parked in an orbit of at least 3,000km altitude, to avoid premature orbital decay.

THARSIS HERCULES - CONSTRUCTION HISTORY

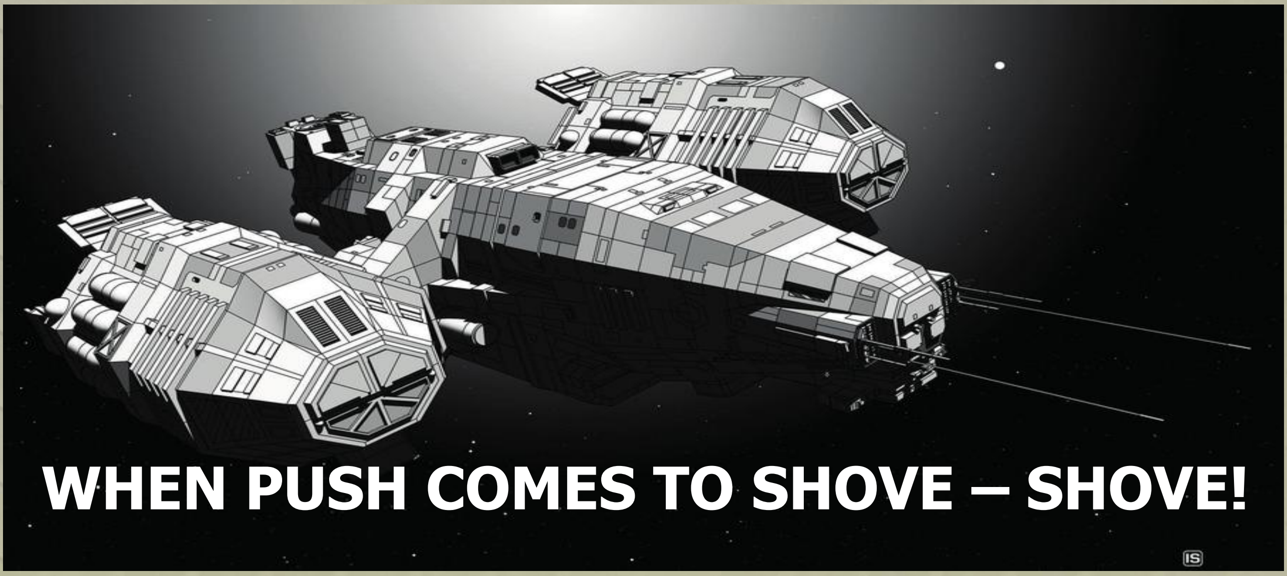
Name	ICO Registry	Operator	First Flight
Hercules	TWV-180286	Frontier	10/10/2224
Goliath	TWV-180287	Frontier	10/24/2224
Eye of the Tiger	TWV-180288	Frontier	11/08/2224
Green Mountain	TWV-150289	Con Am	11/19/2224
Land of Lincoln	TWV-150291	Con Am	12/16/2224
Valhalla	TWV-180292	Frontier	12/22/2224
Southern Giant	TWV-112293	Red Giant	12/28/2224
The Conrad	TWV-140294	Outland	1/05/2225
Nordic Giant	TWV-112296	Red Giant	2/15/2225
Victory Giant	TWV-112297	Red Giant	2/19/2225
Grendel	TWV-116298	Braniff	2/22/2225
Challenger	TWV-116299	Braniff	2/25/2225
Toronto Nørsk	TWV-172300	Nørsk	2/26/2225
Deneb	TWV-130301	Transtar	2/27/2225
Lone Star	TWV-150303	Con Am	3/04/2225
Saint Peter	TWV-111304	MRA	3/11/2225
Vega	TWV-130305	Transtar	3/23/2225
Spirit of Cleveland	TWV-089306	Star Lease	4/01/2225

THARSIS HERCULES - SPECIFICATIONS

Component	Tonnage	$M
Hull		
Hull Config: Standard	15,000	1500
Length	334 meters	-
Width	215 meters	-
Height	98 meters	-
Mass	75,000 metric tons	-
Drives		
Hyperdrive 4 parsec/week	750	1500
Powerplant 4	450 (x10 = MW)	1125
Maneuver Drive 8G	600	300
Fuel – 12 months Power	450 [1,664,284 US Gal]	
Fuel – Maneuver Drive	12,000 [44,380,904 US Galls]	
Control Section		
Bridge	75	75
Computer Model/8	-	45
Basic Civilian Electronics	1	0.05
Cargo Hold	216.5	-
Crew Manifest		
7: captain, pilot, navigator, medic, sensor operator, chief engineer, asst. engineer		
Accomodation		
Staterooms 7	28	3.5
Hypersleep Pods 7	3.5	0.35
Additional Ship Components		
Medbay	4	1
Aerodyne Lifeboat	20	5.43
Utility Jeep	2	0.1
Docking Clamp	250	20
Landing Gear	150	150
TOTALS	15,000 tons	$4,734M

THARSIS HERCULES - PERFORMANCE

Acceleration in vacuum	No Tow Cargo	8G	80 meters/ second^2
Acceleration in vacuum	10,000 ton Tow Cargo	8G	80 meters/ second^2
Acceleration in vacuum	50,000 ton Tow Cargo	2.4G	24 meters/ second^2
Acceleration in vacuum	100,000 ton Tow Cargo	1.2G	12 meters/ second^2
Acceleration in vacuum	1 million ton Tow Cargo	0.12G	1.2 meters/ second^2
Acceleration in vacuum	4 million ton Tow Cargo	0.026G	0.28 meters/ second^2
Endurance	12 months		
Range (Unloaded)	192 parsecs		
Hyperspace Velocity	No Tow Cargo		4 parsecs/week
Hyperspace Velocity	10,000 ton Tow Cargo		4 parsec/week
Hyperspace Velocity	50,000 ton Tow Cargo		2 parsecs/week
Hyperspace Velocity	100,000 ton Tow Cargo		2 parsecs/week
Hyperspace Velocity	1 million ton Tow Cargo		2 parsecs/3 weeks
Hyperspace Velocity	4 million ton Tow Cargo		1 parsec/3 weeks
Max Atmospheric Maneuvering Speed	Mach 2 [2,447 km/h]		
Atmospheric Cruising Speed	Mach 0.89 [945 km/h]		


WHEN PUSH COMES TO SHOVE – SHOVE!

ON-BOARD THE USCS GOLIATH

Perhaps it's a measure of the Hercules' usefulness and capability that I had to wait three months for an available slot to get on-board one of these beasts. They are never resting, each tug in service already has a job sheet extending at least two years into the future. To grab a walkthrough, the Upstream management had to wait until a Hercules was back in Earth orbit at an orbital repair yard for annual maintenance. The vessel in question was the USCS Goliath TWV-180287, operated by Frontier Line on its routes through the American Sector. Whilst the reaction drives were undergoing testing, overhaul and repair, I was allowed full access to the crew section of the vessel. My guide was Amanda Diem, project manager at the Tharsis Heavy Lift Technical Station (HLTS) in Earth geosynchronous orbit.

We began at the station's Docking Bay 7 by stepping through into Goliath's main airlock located at the very forward end of B Deck – the bow of the ship. Standard docking procedure is to retract the ship's forward-facing antennae and sensor arrays in order to use this lock, and it is around 2.8m wide, easily able to fit four suited crewman simultaneously. The look of the airlock is dark, industrial, utilitarian and that is a feature throughout the rest of the ship – in keeping with other commercial vessels of this type. We step out into an EVA assembly area, with tool lockers and suits hanging behind Plexiglass on the left. We aren't suited, so we continue along the metal grated corridor to where it splits port and starboard to skirt the huge forward landing leg bay that occupies two decks of the ship. We turn right and pass a series of technical bays on our right, to our left is a sliding door that opens onto the EVA lift shaft. This lift slides down the side of the landing leg and is only used when landed on the ground. Typically crewmen suit up down on C deck and make their way to the surface from the lift there. Continuing on, we reach companionway number 2, a well-used ladder connecting all three decks. We continue past the ladder-well to explore the dark recesses of B Deck further. It leads us past an industrial lift on the right and, at the end of the long corridor, to red warning semiotics, to the engineering control room. This large area is filled with the advanced and complex machinery required to monitor and control the powerplant and hyperdrive. Steam vents from pipes, monitors flicker in the darkness … we are in the heart of the beast here. The groans, sighs and bellows of the pipework around us just reinforce the analogy.

We return to the companionway. We are on B Deck, the mid-deck, and decide to go up to A deck, to visit the bridge and living quarters. The ladder is situated in an open area in the center of the corridor, with plenty of access space all around. We climb …

A Deck is a living space, and immediately the bare pipework, grille flooring and dark, industrial décor is replaced by molded white fittings, all padded, vacuum-formed and comforting. To the left we see a corridor bend around to the medbay, a large picture window looks in, giving the crew a view inside should anyone be quarantined there. But we head forward into the galley. A central table is covered with a scatter of unwashed crockery, empty Red Dragon beer bottles and girlie magazines. Playboy sits alongside Interstellar Mechanics quite incongruously, there's even a copy of Upstream magazine, an old issue from April 2223. Color monitors hang from the ceiling, and to port is a small kitchen, with a food prep area and overhead lockers labelled with various foodstuffs. The corridor continues, the array of lights telling me in no uncertain terms that the bridge is up ahead.

It is dark here, what's new? Control couches buried in a tangle of monitors, switch panels and electrical conduits are mounted centrally on a raised dais that is surrounded by a walkway, a walkway that gives views out through the picture windows. The ceiling, filled with switches and more CRT's hangs low to create a mood of claustrophobia. This bridge resembles the crowded, archaic cockpit of some old Cold War jet bomber, a B-52 perhaps. A doorway in one corner leads to the computer room, where the level-5 Hosaka Goldstar 400 mainframe can be accessed directly and reprogrammed. We leave the bridge, past a door that leads into the ship's locker – a tool-room packed with survival gear, maintenance equipment and emergency weapons.

Now we head back through the galley <smell of strong coffee here> and back to the companionway. Moving aft, we meet the industrial lift on our way to the rear, to the lifeboat bay. But before we do, we head left to explore the starboard corridor – it opens out into a locker room, doors lead off to crew staterooms and also to the all important hypersleep chamber. The door opens, triggered by our presence, and in the bright, austere light we see the chamber is empty except for the seven cryo-chambers, arranged like the petals around a flower. All are open, unused.

Passing stateroom doors, we reach companionway number 1, this is a back-up, allowing access to other decks should number 2 become blocked. The ladders lead down into darkness, to the CPU back-up on B Deck. These staterooms are used by crews during long orbital layovers, or when a crewman is unwell. I can see they are not just sterile bunks, one crewman has stuck a pirate flag on his door. Another sports the placard "The Boss" (and I hope that's the captain's cabin…). I ask Diem about all of the padded subframes and walls, all neatly finished in plush-looking mustard- or white-colored leatherette. I've seen padded fittings before on big ships, but not to this extent. Why?

"It's to provide some security in the event of a partial or sudden loss of power to the artificial gravity compensation system. If the Goliath is decelerating at 3G and the system fails, then everyone not strapped in is thrown forward triple the speed of falling from a building on Earth. The Hercules class operates at much higher levels of G, hence the increase in padded sections." I ask if they will really do any good. "Well it's going to help reduce injuries at partial power loss, in other circumstances … its mainly psychological…".

It's time to pass through the locker room once again; we reach the companionway and head aft. The white paneling vanishes here, to be replaced with that industrial piping and metal grillwork we saw on B Deck. Yellow and black warning stripes frame the doorway into the Goliath's technical bay, essentially a fully equipped machine shop for the fabrication and modification of ship components. This leads us to the lifeboat bay, with the airlock to the lifeboat in front of us, to the left is another equipment locker and to the right another airlock, this one leading to a hatch on the Goliath's upper hull.

"What d'you want to see next?" asks Diem. "Well, we've seen A Deck at the top of the ship, we started on B Deck, so … the bowels of the ship then? C Deck?"

This time we take the industrial lift from A Deck down to C Deck and emerge into a dark corridor, rotating warning lights can be seen in the distance and steam vents from overhead pipes. Diem leads me aft, the **THARSIS** name stenciled on the back of her jacket. We pass the big cargo doors, one either side of the corridor, both are open and I can see a workloader at ease, and a couple of pallet trucks abandoned. The holds are empty, cargo chains and winches hang limply from the overhead gantry. The long corridor ends at the fuel pump control room, from here liquid hydrogen can be refined, tested and transferred from one tank to another, or vented into space. Access ways head off left and right. We go left, walking past battered-looking spare part lockers, all coded with the type of machinery that they contain. This accessway ends at the starboard thruster control room, where the reaction drive can be fine tuned and diagnostics carried out. Sperry, one of Diem's engineers is in here with some of the panels off the wall, a work-light illuminates the exposed machinery and his toolbox sits open on the metal deck.

"Trouble?" I ask. Sperry seems happy to talk, he tells me that the interior of each exhaust nozzle is coated with layers of mono-crystalline steel, but that the secondary impeller valves that regulate re-channel flow instead have an ablative titanium carbide liner. Sensors monitor the rate of ablation, but those on the Goliath's starboard plasma motor are showing zero wear on the last trip. He needs to know why.

Leaving Sperry to his work, Diem takes me down the right hand accessway that leads to the other thruster control room, we pass a workshop on the left as well as an EVA room - through the open door I can see two empty hard suits stood behind Plexiglass.

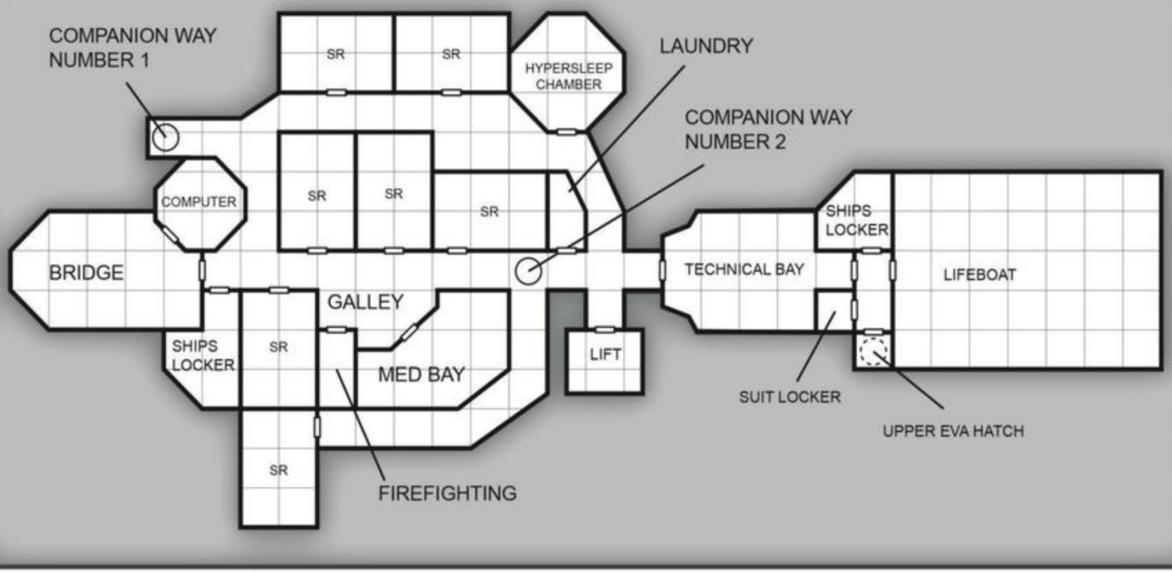
"That airlock leads out to a hatch on the underside of the ship… it's there mainly for the use of the two engineers, and for any emergencies…" It's time to leave and so we re-traverse the main corridor back to companionway number 2. Passing on, Diem leads me into the landing leg bay, above hangs the massive landing leg, folded and bent like some kind of metallic carnivorous flower awaiting springtime. Chains and winches hang from the cluttered overhead space. It's dark in here and there is plenty of exposed machinery, not just for the hydraulics, but for the landing gear bay doors and also for the lifts. There are two, both seem to connect to either side of the hanging leg assembly. The lift to the left is for personnel heading to the ground while that on the right transfers a small 2-ton jeep to the surface. The jeep can be seen in its cradle, behind a mesh grille. The EVA lift is walled off from here, we'd have to leave the leg bay and follow the corridor around to enter it. Once the landing leg is extended and touches the ground, both or either lifts can be used – riding telescoping rails down the landing leg to the ground.

We get out of that dark and eerie chamber, and head right to take a look at the EVA lift, with its wide access airlock door and the rows of hanging space suits and equipment lockers opposite. At the end of the corridor is a life support bay, much of the ship's water and air is recycled and recirculated from here, says Diem. It seems a strange place to end the tour, but she admits that I've seen nearly all of the Goliath's livable interior. We retrace our steps to C Deck's companionway 2 and climb up to B Deck where we take the main corridor forward, back to the docking airlock.

There are a couple of technicians waiting for us at the lock, well, not for me, as it turns out, but for Diem, who is in demand to sign off work, make a decision on some repair, or take a call from the local Frontier Line rep. I thank her for the tour and leave her and the ship behind me. As I turn away Diem pushes a packet of literature into my hand, I promise myself I'll read it on the shuttle back to JFK, but before I stuff it into my pocket, one thing catches me eye: an epic, soul stirring image of a Hercules powering out of a gas giant atmosphere, exhaust plumes extending for hundreds of meters behind it. Above the image and stenciled in Pump Demi font is the slogan:

WHEN PUSH COMES TO SHOVE – SHOVE!

A DECK UPPER


COMPANION WAY NUMBER 1
SR
SR
HYPERSLEEP CHAMBER
LAUNDRY
COMPANION WAY NUMBER 2
COMPUTER
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SR
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SHIPS LOCKER
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BRIDGE
TECHNICAL BAY
GALLEY
SHIPS LOCKER
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MED BAY
LIFT
SUIT LOCKER
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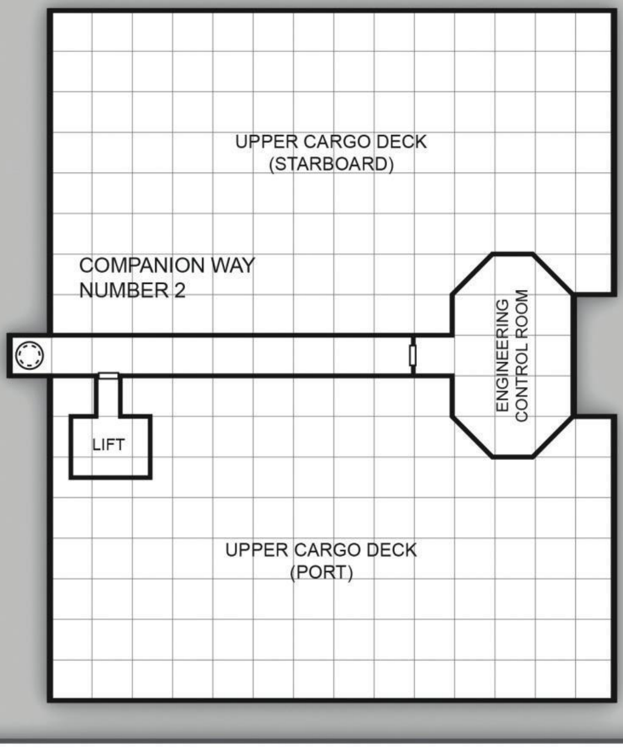
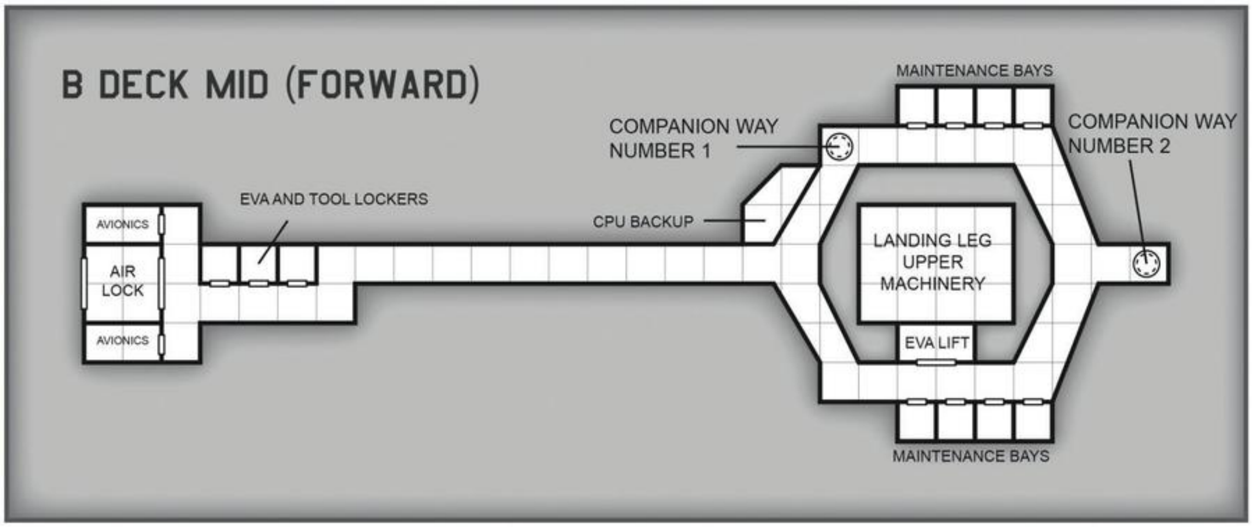
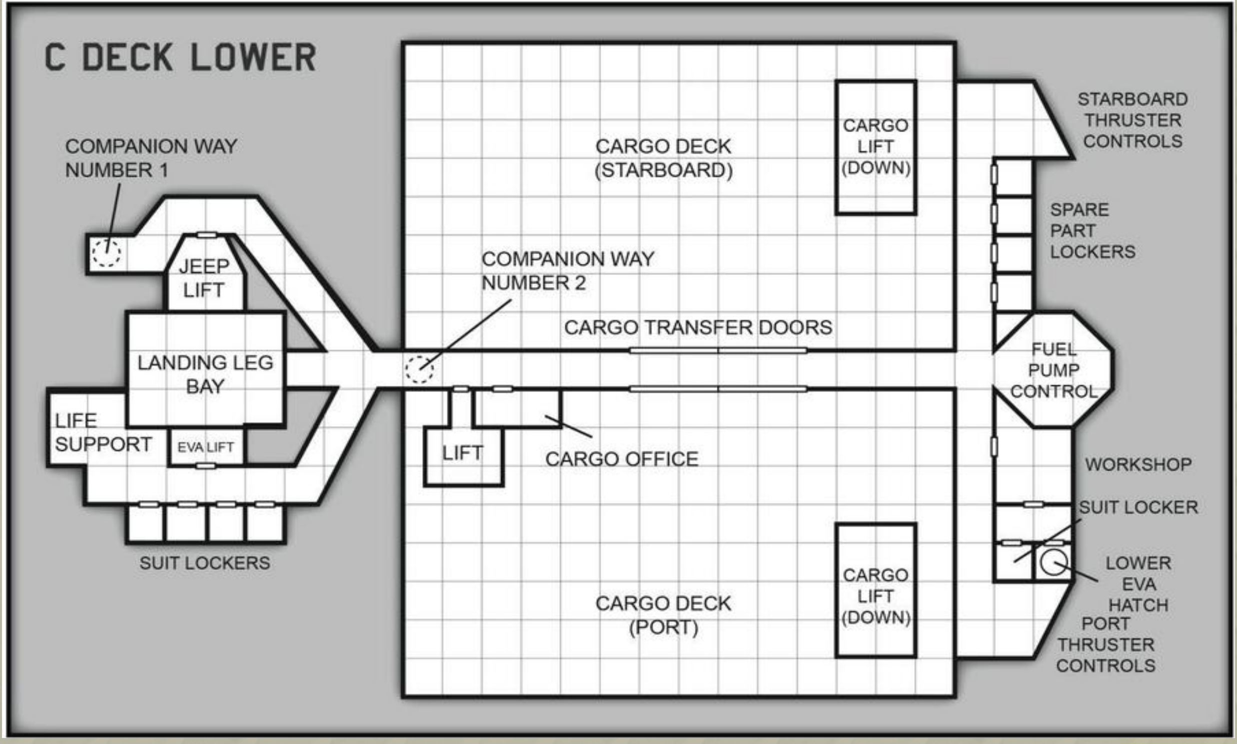
FIREFIGHTING

B DECK MID (AFT)


UPPER CARGO DECK (STARBOARD)
COMPANION WAY NUMBER 2
ENGINEERING CONTROL ROOM
LIFT
UPPER CARGO DECK (PORT)


B DECK MID (FORWARD)
MAINTENANCE BAYS
COMPANION WAY NUMBER 1
COMPANION WAY NUMBER 2
EVA AND TOOL LOCKERS
CPU BACKUP
AVIONICS
AIR LOCK
AVIONICS
LANDING LEG UPPER MACHINERY
EVA LIFT
MAINTENANCE BAYS


C DECK LOWER
CARGO DECK (STARBOARD)
CARGO LIFT (DOWN)
STARBOARD THRUSTER CONTROLS
COMPANION WAY NUMBER 1
SPARE PART LOCKERS
JEEP LIFT
COMPANION WAY NUMBER 2
CARGO TRANSFER DOORS
LANDING LEG BAY
FUEL PUMP CONTROL
LIFE SUPPORT
EVA LIFT
LIFT
CARGO OFFICE
WORKSHOP
SUIT LOCKER
SUIT LOCKERS
LOWER EVA HATCH
CARGO LIFT (DOWN)
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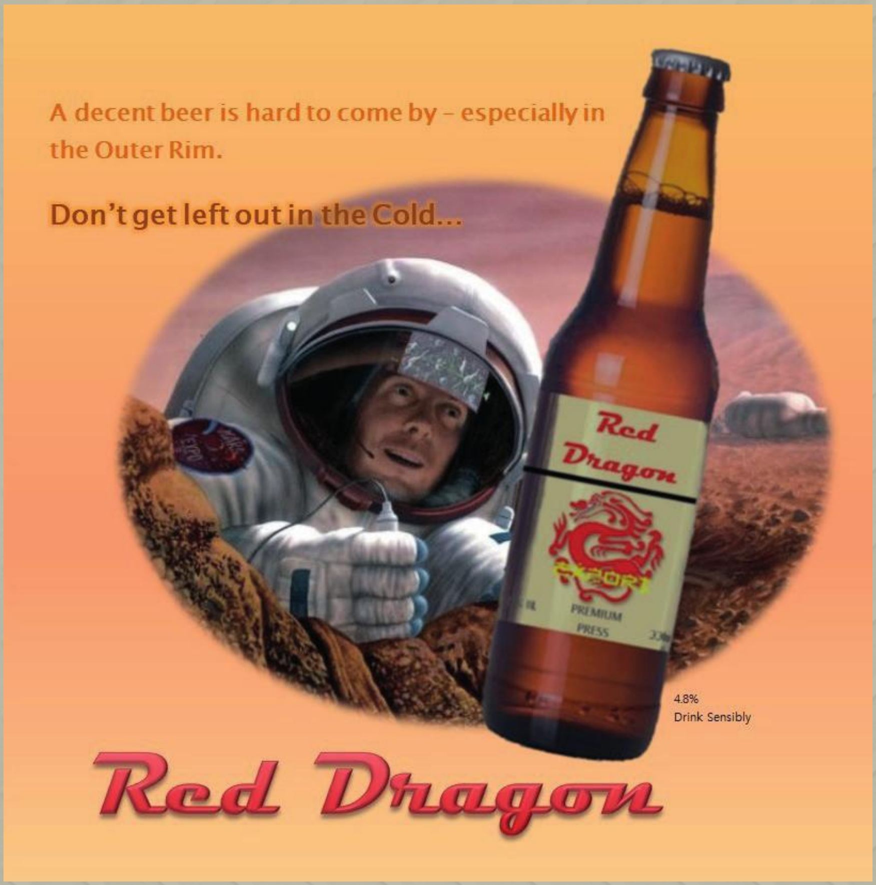
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HOSTILE

<static>

<garbled noise>

<static>

MESSAGE: PREPARE FOR INCOMING TRANSMISSION

<static>

<sound of gunfire>

HOSTILE is a gritty, near future roleplaying setting inspired by movies like Outland and Alien. This retro future setting presents a universe of mining installations, harsh moons, industrial facilities, hostile planets and huge, utilitarian spacecraft. This is a brutal blue-collar future where off-world workers and Marines are isolated, far from home and faced with terrifying challenges and relentless alien horrors.

- An immersive and realistic Near Space setting
- Gritty and scientifically plausible Off-World Colonies
- Many references to classic late-70s and early-80s SF movies
- Complete career write-ups, from Roughneck to Corporate Agent, Marine to Spacer
- Mega-ton starship construction rules
- Campaign and referee guidelines
- More than 30 fully-realized scenario hooks
- The USCS Hercules – a complete commercial towing vessel
- Setting specific equipment and weapon lists

Requires a copy of the HOSTILE Rules, or a copy of Cepheus Engine, to play.